THE STRUCTURE OF ARMENIAN BOOKBINDING AND ITS RELATION TO NEAR EASTERN BOOKMAKING TRADITIONS

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Submitted in partial fulfillment of the
requirements for the degree
of Doctor of Philosophy
in the Graduate School of Arts and Sciences

COLUMBIA UNIVERSITY
1993

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ABSTRACT

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This dissertation consists of the examination and analysis of almost 250 Armenian manuscripts (of which 167 were tabulated into a spreadsheet program and are listed in Appendix 5) ranging in date from the 12th to late 19th centuries, in order to determine what type of bookbinding structure they were made with and what techniques were used to produce them. The sample was drawn from manuscripts examined in twenty-six libraries and private collections, listed in Appendix 1. This study shows that the Armenians used a particular combination of bookbinding techniques for at least four centuries, resulting in a distinctly "Armenian" form of the codex book. The characteristics and methods are described in detail in the order in which the book would have been constructed, along with explanatory diagrams and photographs of manuscripts examined. Until printing in the Armenian language became predominant, this style of binding underwent very little

change over the centuries, even when the Armenians immigrated to diaspora lands (Iran, the Crimea, and Poland for example).

These Armenian methods were next compared and contrasted with the traditional binding methods of neighboring cultures, such as Greek/Byzantine, Syriac, Georgian, and Islamic. A historical basis for the similarities and differences is given, along with a discussion presenting a possible evolution for the development of Armenian binding to its final form (which remained fundamentally unchanged, however, from at least the 14th to the 18th centuries). Possible connections with medieval European bookmaking practices which may have been introduced in Cilicia during the period of the Crusades are also discussed. A glossary of technical bookbinding terms, including the Armenian translation when available, is provided in Appendix 4 for readers unfamiliar with the vocabulary.

TABLE OF CONTENTS

	ACKNOWLEDGEMENTS	ii
1.	INTRODUCTION AND METHODOLOGY	1
2.	CHARACTERISTICS OF ARMENIAN BINDING	20
3.	A COMPARISON BETWEEN GREEK/BYZANTINE AND ARMENIAN BOOKBINDING	91
4.	A COMPARISON BETWEEN ARMENIAN BOOKBINDING AND OTHER EAST CHRISTIAN TRADITIONS	120
5.	A COMPARISON BETWEEN ARMENIAN AND ISLAMIC BOOKBINDING TECHNIQUES	148
6.	CONCLUSION	170
	BIBLIOGRAPHY	194
	APPENDICES	
	1. MANUSCRIPT COLLECTIONS CONSULTED	210
	2. SAMPLE OF RECORDING CARD	211
	3. TRANSLITERATION SYSTEM USED	214
	4. GLOSSARY OF TECHNICAL TERMS	215
	5. LIST OF MANUSCRIPTS	223
	PLATES	235
	COLOPHON	256

Examples of Armenian Bookbinding, at Google Images

ACKNOWLEDGEMENTS

I would like to thank the curators, librarians, and private owners of all twenty-six collections I consulted in the course of this research. I would especially like to express my appreciation to the entire Mekhitarist Congregation of San Lazzaro, Venice, for their help and kindness during the many months I spent working in their library, which made the time I spent there most enjoyable, in particular Fr. Nerses Der Nersessian, Fr. Sahak Djemdjemian, and Fr. Vertanes Uluhogian. I would like to express my deep thanks to Professors Nina G. Garsoian and Thomas F. Mathews for their help and encouragement, and to Prof. S. Peter Cowe for translating publications from Hebrew and Georgian for me, and for his encouragement and contagious enthusiasm.

A number of other individuals deserve mention and my thanks. Mr. Paul Quarrie, Librarian of the Eton College Library (Eton, England) kindly permitted me to examine a manuscript from the Library's collection while it was on loan to the Pierpont Morgan Library for an exhibition. Don Ermenegildo, bookbinder of the Monastero di Santa Giustina in Padova, Italy spent time in 1988 providing technical help on binding. Guy Petherbridge generously

permitted me to consult his unpublished article on Greek sewing techniques. Sid Kemp, Computer Services Manager of the School of Library Service of Columbia University, helped immensely in teaching me to use the Lotus spreadsheet program. Mindell Dubansky, Paula Schrynemakers, and my many bookbinding friends gave support and helpful and always encouraging comments, as did my friends and colleagues Ina Baghdiantz McCabe and Helena Szépe. Judith Hanson generously volunteered her editorial skills and provided many thoughtful suggestions, and Lucy Barsamian helped me with some lengthy translations. Dr. Z. Alexidze, Director of the Institute of Manuscripts, Tbilisi, Georgia, provided me with invaluable information on Georgian manuscripts. Ed Mathews furnished me with an extremely useful bibliography on Syriac manuscripts. Prof. Leonardo Tarán of the Classics Department of Columbia University provided me with information on Greek manuscripts, as did Mme Dominique Grosdidier de Matons of Paris. Jane Greenfield was kind enough to check a reference for me at the Beinecke Library, Yale University, and Lola Koundakjian printed Figures 20 and 21 in Armenian for me. Richard Stone, Objects Conservator of the Metropolitan Museum of Art, patiently explained silverworking techniques to me.

Support from the Jacob Javits Fellowship Program (United States Department of Education), the Gladys Krieble Delmas Foundation, and the Zohrab Fund of Columbia University, made it possible for me to conduct the research for this dissertation. The Kress Foundation also awarded me funding in 1989 to take courses on the identification of wood and papermaking fibers at the Institute of Archaeology (University of London). I am greatly appreciative to all these organizations for their generous aid.

I would also like to dedicate this dissertation to the memories of Prof. Sirarpie Der Nersessian and my grandmother, Alice Babikian Merametdjian, who in different ways both influenced me more than they ever realized.

Chapter 1

Introduction and Methodology

Introduction

The codex form of the book has become such a commonplace object in so many parts of the world today that it is rarely thought of as an important cultural artifact, nor are most people aware that the book is a technically complicated object with a long history. Living in the "information age" of the 20th century, people tend to be concerned solely with the information content of books, without realizing that the object itself is also of great historical value and cultural interest.

The book has long been recognized as one of the most important elements in the transmission of culture. It functions as a vital means for the transmission of ideas, facts, and information. The intellectual content is, however, just one component of what we can learn from books. A great deal can be discovered from codicological studies (i.e., studies of the book as a physical object). Books are unified objects made up of different components-physical, textual, and often decorative--each of which individually provides us with information and evidence about the civilization that produced them, and when examined as a whole, can provide us with links or

connections perhaps not apparent otherwise. The decoration of the book, its method of construction and the materials used in its fabrication all provide precious information about the people and culture that produced that book, however humble it may be, and may also indicate contacts with other cultures.

Studies of medieval manuscripts and early printed books have traditionally focused on textual studies or stylistic analyses of the miniatures and their relationship with other artistic centers. This is also true in the study of Armenian manuscripts, where scholars have conducted many textual studies in the field of Armenian historiography, and the miniatures have been recognized by art historians for their artistic importance.[1] However, more technically oriented examinations have recently been undertaken. For example, in Western European books, studies have been made on the

[1]Besides the many publications of Sirarpie Der Nersessian who was one of the first scholars to study Armenian miniatures seriously (see Bibliography for a partial listing), more recent studies include: Helen C. Evans, "Manuscript Illumination at the Armenian Patriarchate in Hṙomkla and the West," Ph.D. diss., New York University, 1990; Alice Taylor, "Armenian Gospel Illustration: The School of Vostan (1390-1437)," Ph.D. diss., New York University, 1988; Thomas F. Mathews, "The Early Armenian Iconographic Program of the Ējmiacin Gospel," East of Byzantium: Syria and Armenia in the Formative Period, ed. N. G. Garsoian et al., (Washington, D.C.: Dumbarton Oaks, 1982), 199-215; and T. F. Mathews and A. K. Sanjian, Armenian Gospel Iconography: The Tradition of the Glajor Gospel, (Washington, D.C.: Dumbarton Oaks, 1991).

inks used in the Gutenberg Bible, considered to be the first book printed with movable type.[2] In Armenian medieval manuscripts, an intriguing continuing project supervised by Prof. T. Mathews of New York University's Institute of Fine Arts and conducted with the help of chemists and other scientists, has analyzed the pigments used in the miniature paintings by means of chemical and small particle analysis techniques.[3] These analyses have

[2]The inks were found to have an unusually high metallic content, which changed slightly in different parts of the book, providing information on the printing process. Richard N. Schwab et al., "Cyclotron Analysis of the Ink in the 42-line Bible," Papers of the Bibliographical Society of America 77 (1983): 285-315; Richard N. Schwab et al., "New Evidence on the Printing of the Gutenberg Bible: The Inks in the Doheny Copy," Papers of the Bibliographical Society of America 79 (1985): 375-410.

[3]D. Cabelli and T. F. Mathews, "The Palette of Khatchatur of Khizan," The Journal of the Walters Art Gallery 40 (1982): 37-40; Idem, "Pigments in Armenian Manuscripts of the Tenth and Eleventh Centuries," Revue des Études Arméniennes n.s. XVIII (1984): 33-47; D. Cabelli, M. V. Orna, and T. F. Mathews, "Analysis of Medieval Pigments from Cilician Armenia," in Archaeological Chemistry III, ed. Joseph B. Lambert, Advances in Chemistry Series, no. 205 (Washington D.C.: American Chemical Society, 1984), 243-254; P. L. Lang et al., "Characteristic Infrared Frequencies of Red Pigments Derived from Anthraquinone," Vibrational Spectroscopy 1 (1991): in press; T. F. Mathews, "A Pigment Analysis of Medieval Armenian Manuscripts," in XVI Internationaler Byzantinistenkongress, Wien, 4-9 Oktober, 1981: Akten, ed. Herbert Hunger (Vienna: Verlag der Österreichischen Akademie der Wissenschaften, 1981), 3.2; M. V. Orna et al., "Applications of Infrared Microspectroscopy to Art Historical Questions Regarding Medieval Manuscripts," Archaeological Chemistry IV, ed. Ralph O. Allen, Advances in Chemistry Series, no. 220 (Washington, D.C.: American Chemical Society, 1989), 265-288; M. V. Orna and T. F. Mathews, "Four Manuscripts at San Lazzaro, Venice," Revue des Études Arméniennes 25 (1991), in press; Idem, "Pigment

provided precise information on the materials used by the artists and insight into their painting techniques, and, when enough data has been accumulated, may help to identify workshops and localize manuscripts for which the place of origin or date of production is not known. It can also indicate what materials may have been imported, giving us further information on trade, and may help in the detection of forgeries. Pigment analysis has also recently been undertaken on some Islamic manuscripts from the Vever Collection in the Smithsonian Institution, along with a technical examination and fiber analysis of the paper.[4]

In themselves, books can indicate the relative wealth of a civilization during a certain period, its aesthetic sensibilities, possible trade relations, and its contact with other nations. The techniques used by the bookbinders will indicate the state of the technology available, and close examination may reveal that certain techniques were borrowed or adapted from other cultures,

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Analysis of the Glajor Gospel Book of U.C.L.A.," Studies in Conservation 26 (1981): 57-72; Idem, "Uncovering the Secrets of Medieval Artists," Analytical Chemistry 60 (1988): 47A-56A.

[4]Elisabeth West FitzHugh, "Study of Pigments on Selected Paintings from the Vever Collection," and Janet G. Snyder, "Study of the Paper of Selected Paintings from the Vever Collection," in An Annotated and Illustrated Checklist of the Vever Collection, ed. Glenn D. Lowry and Milo Cleveland Beach, 425-432 and 433-440, (Washington, D.C.: Smithsonian Institution, 1988).

while others may be indigenous developments. This is naturally of importance in the study of the history of technology.

Codicological studies have practical uses as well. If a detailed enough study of ancient bookbinding techniques can be conducted, one might be able to determine whether the techniques changed and developed over time, and whether slightly different techniques were developed in the various geographic regions where a certain population, such as Armenians for example, lived. If a typology based on these factors can be developed, it may be possible to determine the approximate date of fabrication and/or the provenance of manuscripts for which this information is lacking, information which can add to or corroborate what is now being learned from other research, such as paleographical, stylistic, or technical examinations such as the pigment studies mentioned above. It should be noted here that detailed knowledge of the techniques used in the binding of books of different cultures is also of importance to book conservators, so that if it should become necessary for them to treat a damaged or deteriorated book they will understand how the book was constructed and be able to use appropriate methods and techniques in order to retain the book's integrity.

Studies and comparisons of both the artistic and technical aspects of book production will often exemplify cultural and technological interactions between different civilizations. The evidence used can be that acquired from codicological studies, from its information content (including any colophons, often a rich source of information), and from the examination of illuminations and external decoration. The Armenian book is especially interesting to study as a reflection of its cultural history because the strategically placed region was often at the crossroads of cultural, economic, and technological exchanges between East and West. We know that Asia Minor, the Caucasus, and Iran were regions where much cultural interchange occurred, especially in Armenia, which often formed the border area between rival kingdoms.[5] Western influence was also felt especially after the Crusades.[6] These influences can be seen in varying degrees when examining Armenian art, architecture, and the craft of bookmaking.

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[5]For general works on Armenian history, see Sirarpie Der Nersessian, The Armenians (London: Thames and Hudson, 1969) or Gérard Dédéyan, ed., Histoire des Arméniens (Toulouse: Éditions Privat, 1982).

[6]Gérard Dédéyan and Nicole Thierry, "Le temps de la croisade (fin XIe - fin XIVe siècle)," Histoire des Arméniens ed. G. Dédéyan (Toulouse: Éditions Privat, 1982), 297-340. Helen C. Evans, "Manuscript Illumination at the Armenian Patriarchate in Hromkla and the West," Ph.D. diss., New York University, 1990.

The long history of Armenian books and manuscripts dates back at least to the early fifth century with the invention of the Armenian alphabet, still used today, by the scholar and cleric Maštoc'. Unfortunately, no complete manuscripts dating from this period remain. The oldest securely dated manuscript is a Gospel copied in AD 887[7] and now located in Erevan,[8] although older fragments may still exist, some of which were used as flyleaves in later manuscripts. As might well be expected, most of the works which remain are of a religious nature; the Armenians as a society began their conversion to Christianity in the early fourth century AD, and one impulse for inventing the Armenian alphabet was to translate the Bible and other Christian texts into

[7]Avedis Sanjian, Colophons of Armenian Manuscripts 1301-1480 (Cambridge: Harvard University Press, 1969), 4. This Gospel, known as the Lazarean Gospel since it was formerly at the Lazareff Institute of Moscow, is now Ms. 6200 of the Matenadaran. Sirarpie Der Nersessian, Armenian Manuscripts in the Walters Art Gallery (Baltimore: Walters Art Gallery, 1973), 2. The Gospel said to have belonged to Queen Mlk'e (San Lazzaro, Venice Ms. # 1144) may be older but there is some controversy over the date. See: Fr. Mesrop Janashian, Armenian Miniature Paintings (Venice: Armenian Press of San Lazzaro, 1966), 17-19.

[8]The collection is located in the Matenadaran (the Maštoc' Institute of Ancient Manuscripts--Maštoc'i anvan hin jeragreri institut "Matenadaran") in Erevan, Armenia. It also includes the entire manuscript collection of the patriarchate of Ējmiacin, Armenia. [Note that the transliteration system used throughout this study is the Hübschmann-Meillet system as accepted by the Revue des Études Arméniennes, reproduced in Appendix 3].

Armenian from Greek and Syriac.[9] It is interesting to note that these religious books were considered sacred in and of themselves; there are numerous colophons which describe how a Gospel, for example, was stolen and "held hostage" by infidels until the buyer "freed it from slavery by the Muslims" and donated it to a church.[10] However, many other genres are represented, such as historical works, geographies, cosmological works, poetry, grammars, philosophical works, etc.

There are approximately 25,000 complete Armenian manuscripts (up to and including the 18th century) still in existence today. The largest number are located in the Matenadaran, which boasts over 10,000 volumes. The library of the Armenian Patriarchate in Jerusalem contains about 4000 manuscripts, and there are roughly 5000 volumes and fragments located in Venice, Italy, at the library of the Armenian Benedictine order of the Mekhitarists on the island of San Lazzaro. The Mekhitarist library of Vienna has some 2600 manuscripts, there are about 1000 in various collections in New Julfa, Iran, approximately 1000 in Bzommar, Lebanon, about 350 in the Bibliothèque Nationale

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[9]Koriun, The Life of Mashtots, trans. by Bedros Norehad (New York, 1965). [Reprinted in Vark' Mashtots'i-Koriwn (Delmar, New York: Caravan Books, 1985)].

[10]L. S. Xač'ikyan, ed., XIV Dari Hayeren Jeŕagreri Hišatakaranner (Erevan, 1950), colophon # 429 (dated AD 1430). See also A. Sanjian, Colophons of Armenian Manuscripts 1301-1480, 30.

in Paris,[11] and circa 500 manuscripts located in scattered collections in the United States and Canada.[12] Other important European collections are the Vatican Library in Rome, the library at the University of Tübingen, the British Library in London, the Bodleian Library of Oxford University in Oxford, England, and the Chester Beatty Library in Dublin, Ireland.

Interest in codicological studies and bindings of groups of manuscripts has been increasing, with studies of the bookbinding structures of English, Islamic, and Greek manuscripts now published, as well as codicological studies of Italian Renaissance manuscripts.[13] However,

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[11]However, many of these are 19th century copies.

[12]A. Sanjian, A Catalog of Medieval Armenian Manuscripts in the United States Vol. 16: Near Eastern Studies (Los Angeles: University of California Publications, 1976), p. 1, note 5. Sanjian explains in note 5 how he calculated his total of circa 800 manuscripts in the United States; however, H. Kurdian's private collection of 300 manuscripts was donated to the Mekhitarist Library in Venice between 1976-1979. I have therefore altered his figure of 800 to approximately 500, although there may actually be less than that since some private collections have since been dispersed. The largest single collection in the U.S. is located at U.C.L.A., with 92 manuscripts.

[13]Bernard C. Middleton, A History of English Craft Bookbinding Technique, 2nd ed. (London: The Holland Press, 1978); Gulnar Bosch, John Carswell, and Guy Petherbridge, Islamic Bindings and Bookmaking (A Catalogue of an Exhibition, The Oriental Institute, The University of Chicago May 18-Aug. 18, 1981), (Chicago: The University of Chicago, 1981); Carlo Federici and Kostantinos Houlis, Legature Bizantine Vaticane, (Rome: Fratelli Palombi Editore, 1988); Albert Derolez, Codicologie des manuscrits en écriture humanistique sur parchemin, Bibliologia, vols. 5-6 (Tournhout: Brepols, 1984).

preliminary research of secondary sources on the subject of Armenian bookbinding indicated that almost nothing had been published on the topic. Until the research for this dissertation was undertaken, only one short article devoted to Armenian bookbinding existed, in Bazmavep (1953) by Berthe van Regemorter.[14] This article is a general introduction to the topic based on what appears to be the examination of only a few manuscripts, and does not clearly (nor correctly) explain certain technical aspects of the binding technique. Van Regemorter briefly mentioned Armenian bookbinding in a later article on Greek bindings and in another article on the history of binding.[15] However, in an article published posthumously on Byzantine binding,[16] she made further details available and correctly described the sewing and board attachment of Armenian bindings. A few cursory sentences on Armenian binding techniques can also be found in scattered books or

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[14]Berthe van Regemorter was a pioneer in the study of binding structures. Berthe van Regemorter, "La reliure arménienne," Bazmavēp no. 8-10 (1953): 200-204. Bazmavēp is the scholarly journal published by the Mekhitarist Congregation of Venice since 1843.

[15]Idem, "La reliure des manuscrits grecs," Scriptorium VIII (1954): 20. Idem, "Le Codex relié depuis son origine jusqu'au Haut Moyen-Age," Le Moyen Age 61, no. 1-2 (1955): 14.

[16]Idem, "La reliure byzantine," Revue Belge d'Archéologie et d'Histoire de l'Art XXXVI (1967): 122-124.

articles primarily concerned with bookbinding of other cultures,[17] and two other works concerned with Armenian manuscripts mention bookbinding structure.[18] Thus, most of the previously published information is not of a scholarly nature--the brief statements are not often backed up by any conclusive data, the explanations are confusing and do not include any diagrams to help clarify them (extremely important for explaining sewing and board attachment techniques), and on occasion the information was later found to be incorrect. It should also be mentioned here that thus far no medieval (or later) Armenian manuals on the craft of bookbinding have been found, although they do exist in other traditions.[19] Consequently, I began my own

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[17]Douglas Cockerell, "The Development of Bookbinding Methods--Coptic Influence," The Library 4th series, XIII, no. 1 (June 1932): 15-17; Bosch et al., Islamic Bindings and Bookmaking, 46, 65-66; Giampiero Bozzacchi, "Il codice come prodotto e come oggetto di restauro--Osservazioni di metodo," Bollettino dell'Istituto Centrale per la Patologia del Libro (Rome), XXXVI (1980): 324.

[18]B. Aṙak'elyan, "Kazmeri zardarman arvestĕ miǰnadaryan Hayastanum," [The Art of Decorative Bookbinding in Medieval Armenia], Banber Matenadarani 4 (1958): 184. This article deals mainly with the decoration of the covers. Heide & Helmut Buschhausen, Armenische Handschriften der Mechitaristen-Congregation in Wien (Vienna, 1981), 77-78. The section on bookbinding technique in the Aṙak'elyan article is unclear and there are no diagrams to clarify the written information, and the page and a half section on binding in the Buschhausen book (written by Mirka Symon), although mostly correct, seems to be based on the restoration of one manuscript.

[19]The earliest manual with a section devoted to bookbinding appears to be an 11th century Arabic one, titled "Book of the Staff of the Scribes and Implements of the Discerning..." by ibn Badis. The chapter on

examination of manuscripts located in the various collections listed in Appendix 1, asking myself the following questions: What are the "typical" physical characteristics of Armenian manuscripts, if any? How are these manuscripts constructed? Are the binding techniques similar to or different from methods used by other cultures, such as in Western European, Islamic, or East Christian manuscripts? Were any techniques or characteristics influenced by those of neighboring cultures? Are any techniques or characteristics uniquely Armenian? Was only one method used, or were different techniques used concurrently in the different geographic areas where Armenians were binding books? Did the methods change over the centuries? Who were the bookbinders? Did they leave any colophons giving us the date of the binding or any information on their binding techniques? Would it be possible to develop a typology based on this information which could be used for dating undated manuscripts and/or facilitating the determination of their

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bookbinding has been translated by Gulnar Bosch in Ars Orientalis 4 (1961): 1-13, and the entire work was translated by Martin Levey in "Medieval Arabic Bookmaking & Its Relation to Early Chemistry and Pharmacology," Transactions of the American Philosophical Society 54/4 (1962): 3-79. The earliest European manual is from Antwerp, written by Anselme Faust in 1612. For further information, see Graham Pollard, (continued by Esther Potter), Early Bookbinding Manuals: An annotated list of technical accounts of bookbinding to 1840, Occasional Publication No. 18 (Oxford: Oxford Bibliographical Society, Bodleian Library, 1984).

provenance? Could an analysis of the binding decoration provide useful information on the date or provenance of manuscripts?

Methodology

Since a detailed examination of manuscripts was indispensable in order to begin answering any of these questions, the research for this thesis consisted of the examination of almost 250 Armenian manuscripts studied in various collections located in the United States, Canada, and Europe, listed in Appendix 1. Out of these 250 manuscripts, a total of 167 were used for this analysis.[20] Although the study of 167 manuscripts is evidently not exhaustive, it is a significant sampling of the material available in the United States and abroad. For this study I developed a three-page recording form (originally based on one for East Christian manuscripts used by students in Columbia University's Library and Archives Conservation Program) on which the physical description was precisely recorded, including information such as the dimensions, materials used, and further details such as a description

[20]The 81 manuscripts not included, all from the U.C.L.A. collection, were not tabulated and analyzed for this study because much of the data necessary for this analysis was incomplete, due to the limited time available to me in Los Angeles. Ten manuscripts from U.C.L.A. were thoroughly examined, however, and these were included in the database.

of its endbands, fore-edges, board attachment, sewing, etc.[21] (See Appendix 2 for a sample of the final revised form, and Appendix 4, "Glossary of Technical Terms", for technical vocabulary used in this work). When permitted, I shot photographs or slides, or made rubbings of the blind-tooled covers by using thin tissue paper and a soft pencil. Sketches of any unusual features were made, especially if the curators or owners would not permit photography or rubbings. I also recorded facts available from any remaining colophons on the third page of the form, such as the date and place of fabrication of the text, binding date and place if included, name of the scribe, binder, patron, etc., and also any information concerning a later rebinding of the manuscript (such as the occasional inscription left by the binder.)

The examination of manuscripts began on a limited basis with material accessible in the United States. In the early stages of this research project, I examined all the Armenian manuscripts available in a collection, regardless of whether they had a colophon or not, since there were so few (the collections were small, ranging from one to less than a dozen). I later decided to

[21]The form underwent numerous changes during the years in which it was used, as I gained knowledge and added more observations to my data. Therefore, some of the information for the manuscripts recorded in the early days of this research is less complete than for those examined more recently.

continue my investigation by examining only manuscripts with a colophon which provided both a date and a provenance for the writing of the text, in order to provide a terminus post quem for the binding.[22]

I continued the research in Europe where larger collections are available. The major investigation was conducted in Venice at the monastic library of the Mekhitarist Congregation. Although the largest collection is located in Erevan, it was not accessible at that time, and it was evident that the Venetian collection was large enough to get a good sampling. Additionally, I examined a few more manuscripts in the Vatican Library and the Casanatense Library in Rome, the Bibliothèque Nationale in Paris, and the British Library in London. For these European collections, I usually referred to their published catalogues of Armenian manuscripts first in order to save time in choosing manuscripts with both a date and provenance. Some of the catalogues (for example, those of the Mekhitarist collection) are organized by manuscript content; there may therefore be a slight bias towards the examination of manuscripts of a certain type, which were the ones catalogued.[23]

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[22] At the U.C.L.A. collection, however, all manuscripts were examined.

[23] Fr. Barseł Sargisean, Mayr C'uc'ak Hayerēn Jeṙagrac', Vol. 1 (Venice: San Lazzaro, 1914) describes Bibles, Psalters, and Gospels; Volume 2 (1924) by the same priest describes Collections of Sermons/Homilies,

Each manuscript was numbered from 1 to 167. I entered the data collected for each manuscript in a spreadsheet program, from which the calculations were made.[24] Quantitative information was calculated based on all the manuscripts (for example, what percentage used wooden boards for their covers, cloth doublures, raised endbands, etc.) The dated manuscripts ranged from the late 12th to the early 19th centuries. Another problem to be aware of is that most of the dates available were actually the dates of the completion of the texts, and might not necessarily be the date of the binding. Only thirty-one manuscripts included textual colophons or tooled inscriptions on the covers which specifically mentioned the binding or repair date. In many cases, it would be more correct to call these rebinding dates, since these manuscripts were rebound at a later time, and the subsequent binder added his own colophon stating that fact

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Miscellanies (Oskep'orik), and Collections of Writings of Early Authors (Havak'umn Banic' Naxneac'); Fr. Barseł Sargisean and Fr. Grigor Sargsean Mayr C'uc'ak Hayerēn Jeṙagrac', Vol. 3 (Venice: San Lazzaro, 1966) describes Ritual and Ordination books. Volume 4 is in press and should be out in the near future.

[24]The program used was Lotus 1-2-3, Release 2.3. I would like to thank Sid Kemp of the School of Library Service, Columbia University, for his invaluable help in teaching me to use this program.

and asking future readers to pray for his soul for having performed this pious deed.[25]

Statistics were sometimes also calculated separately on those manuscripts which appeared to be in their original bindings, i.e., that had no evidence of rebinding, such as:

-unused notches or sewing holes which had been made through the fold of each signature in order for the sewing thread to go through;

-excessively trimmed margins, where decoration or even lettering had been cut into (edges are often trimmed when re-sewing since it is difficult to perfectly re-align the quires);

-folios out of order;

-gutter repairs made on conjugate pages;

-an obvious anachronism between the style of the present binding and the date of the text (a 13th c. text in a 19th or 20th century-style binding);

-an endband style incompatible with the date of the text (the sewing of the endbands is structurally very important to the construction of these books and can therefore be an important indication of rebinding).

[25]Note the possibility that these manuscripts may have been rebound yet again at a later date, without a colophon left by the subsequent binder.

Other details may also point to rebinding, such as the use of a different type of leather on the spine than was used on the rest of the book, which might indicate extensive repair work; endpapers used which are not appropriate to the date of the text; corner repairs or other patches; the use of materials which are not contemporary with the book; or even a tooling style which is not compatible with the date of the book.[26] More often it will be a combination of the above which will lead the observer to the conclusion that the manuscript has been rebound. If none of the above evidence is present, it is likely that the binding is the original one.

It would be important to examine a larger number of older manuscripts (i.e., pre-17th century) in their original bindings, but it is of course more difficult to do this because fewer older manuscripts exist in their original bindings. The older and more worn the manuscripts become, the more likely it is that a future owner may desire to re-furbish the book and "make it look new again," usually destroying much of the evidence sought. It should be emphasized, however, that the characteristics, materials, and methods used for the majority of these "dated" bindings were remarkably

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[26]Note that a study of tools has not yet been undertaken for Armenian manuscripts, although Ałak'elyan began analyzing the overall decoration of the covers (see note 18).

consistent, from the early manuscripts to the 17th c. ones, and the characteristics were even seen in some as late as the early 19th century.[27] Only the very late bindings (18th and 19th centuries) showed any significant deviation from the others.

These characteristics, materials, and methods will be discussed in detail in Chapter 2, and subsequent chapters will compare and contrast them with the traditional bookmaking methods used by cultures with which Armenians were likely to have had contact.

[27]UCLA Special Collections Arm. Ms. 28 (a Ritual copied in AD 1814 in New Julfa) and Ms. 29 (a Ritual book and other texts copied in AD 1817 in Iran, probably New Julfa).

Chapter 2

Characteristics of Armenian Binding

Introduction

The characteristics of Armenian bookbindings and the techniques used for their fabrication from approximately the 14th to the 18th centuries (with a few examples from the early 19th century) in manuscripts of widely varying provenance will be described in detail in the following sections. Figure 1, "Anatomy of a Book", and Appendix 4, "Glossary of Technical Terms" should be consulted for those readers unfamiliar with the vocabulary used. All the features and techniques specified describe the majority of the manuscripts examined.

It might first be useful to briefly outline the main features common to all codex books. We may then better understand which characteristics different bookmaking traditions shared and how and where the traditions diverge, thereby enabling each cultural entity to develop its own distinguishing features for this craft. Codex books are composed of folded leaves, usually of paper or parchment (papyrus was used mainly in very early times especially for scrolls, between the 4th century BC and the

4th century AD),[1] which are placed one inside the other to form quires or signatures. These quires are then sewn through the fold to the other quires to form a text block. The sewn text block then needs a protective covering (usually wooden or pasteboard boards) to which it must be attached in some way. In addition to the board attachment, endbands are usually sewn at the head and tail of the book, and then attached to the boards, forming an additional connection between the text block and boards. The exterior of the boards is then usually covered with another material (typically leather, but in later periods cloth or paper), which can be further decorated if desired, and the inside of the boards may be left as is or lined with leather, cloth, paper, or parchment.

The wide variety of methods which have developed over the centuries in different cultures for the above-mentioned features is remarkable--the sewing, board attachment, and the working of endbands can be accomplished in numerous ways. The materials chosen for constructing these manuscripts (including, among others, the type of thread used, the material used for the sewing supports, the endband cores and embroidery of the endband, or the type of wood and leather chosen) are also diverse,

[1]Matt T. Roberts and Don Etherington, Bookbinding and the Conservation of Books-A Dictionary of Descriptive Terminology (Washington, D.C.: Library of Congress, 1982), 190.

although the choice will often be dictated by availability, cost, and custom. The many variations possible in both the materials and methods used (only a small sample of which are mentioned above) make it clear that many combinations are possible. A certain combination becomes the conventional, accepted method and establishes a binding style of a culture or region.

Most extant Armenian manuscripts are in codex form; however, scrolls also exist.[2] These scrolls or phylacteries, known as hamayil in Armenian, usually "...contain prayers, readings from the Gospels, magical formulas, and invocations for protection from all kinds of dangers and sicknesses, whether on land or at sea."[3] Since they are not bound but are made by gluing or pasting smaller pieces of paper together (although perhaps parchment was also used) into a long strip and rolling them up, they will not be the subject of any discussion here except to point out that they exist.[4]

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[2]Two scrolls were examined in this study: the 17th-18th century "Roll of Cyprian" at Union Theological Seminary in New York City, (Arm. Ms. 5), and a Prayer scroll at Columbia University Rare Book and Manuscript Library (Arm. Ms. 6, Smith Collection), tentatively dated between the 17th and 19th centuries.

[3]Avedis Sanjian, A Catalog of Medieval Armenian Manuscripts in the United States, Vol. 16: Near Eastern Studies (Los Angeles: University of California Publications, 1976), 12.

[4]Further studies of these phylacteries should be undertaken in order to compare them with similar Ethiopian

Preparation of the Leaves

The format of the Armenian codex book is usually vertical, that is, the book is taller than it is wide, and since the Armenian language is read from left to right the book is bound on the left side and opens from the right.[5] The text is made of either parchment or paper leaves (on rare occasions, both). In this sample, 71% of all the manuscripts examined were paper, 23% were parchment, and ten manuscripts were both paper and parchment, forming the remaining 6%. One parchment manuscript was a palimpsest,[6] and the parchment section of one manuscript made of both paper and parchment was a palimpsest of a Latin manuscript.[7] Parchment was still used rather late--the

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Christian "magic scrolls"--see Jacques Mercier, Ethiopian Magic Scrolls (New York: Braziller, 1979).

[5]Only one manuscript seen in this sample (UCLA Arm. Ms. 33) was wider than it was high. This Calendar of Feasts (Tōnac'oyc') was dated AD 1460-1461 and was from Urc village in the region of Ayrarat, and had no evidence of rebinding. It may have been made specifically in this unusual manner since it was a small calendar and not an ordinary text. The writing was oriented parallel to the spine, not perpendicular as we would normally find in a book with a vertical format.

[6]San Lazzaro Ms. 2061, a Ritual from Sebastia dated AD 1548.

[7]British Library Ms. Or. 5761, an Armenian Gospel from Muš (Taron) copied in AD 1402. The Latin work was probably a 14th c. law book, according to F. Conybeare, Catalogue of the Armenian Manuscripts in the British Museum (London, 1913), 36. The colophon of Ms. Or. 5761 recorded the date both in the Armenian era (851) and the "year of Jesus Christ 1402."

latest parchment manuscript in this sample was dated AD 1678, and the earliest were dated AD 1193.[8] In this study, paper was used in a manuscript dated as early as AD 1201 (the earliest dated paper manuscript in this sample),[9] and the last hand-copied paper manuscript examined here was dated 1817.[10] Four books printed on paper were also examined.[11]

The surface of the paper was usually prepared with either an animal size or some type of starch, called sizing, so that the scribe or illuminator could use inks, paints, or pigments on the leaves without any bleed-

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[8]The AD 1678 parchment manuscript is a Hymnal copied in Constantinople and now located in the Walters Art Gallery in Baltimore (Ms. W 547). Two parchment Gospels both dated AD 1193 were examined, one in the Walters Art Gallery (Ms. W 538), probably copied in Cilicia, and the second one in the San Lazzaro Collection (Ms. 1635), copied in Cilicia.

[9]San Lazzaro Ms. 696, portion of a Bible (the Book of Solomon), copied in Hṙomkla, Cilicia. The earliest known dated Armenian manuscript written on paper was copied in AD 981, and is located in the Matenadaran (Ms. 2679). A. Abrahamyan, Hayoc' Gir ev Grč'ut'yun (Erevan: Erevan University Publishers, 1973), 282.

[10]UCLA Special Collections (Los Angeles, CA), Armenian Ms. 29, a Ritual and Other Texts, from Iran (probably New Julfa).

[11]Two copies of the Haranc' Vark' (Lives of the Fathers) printed in New Julfa in 1641: San Lazzaro Ms. 1527, and a copy in the collection of the Eton College Library (no call number given); a Gospel printed in Venice in 1816 and located at the American Bible Society in New York (no call number); and the Urbat'agirk', one of the first books printed in Armenian, printed in Venice around 1511 (San Lazzaro Ms. 2225).

through or spreading.[12] In the Armenian tradition, it is likely that starch was used for sizing paper.[13] It is also probable that the paper was polished or burnished after sizing, giving it a smooth shiny surface. Numerous Armenian colophons from different centuries mention the names of those who polished the paper.[14]

The leaves would probably then be folded and/or cut to the chosen size and then pricked and ruled. The edges of each bifolio were evenly pricked with a needle or the point of a knife; the space between each prick was determined by how wide a writing margin or line was desired. The horizontal ruling lines would be made by connecting the prick marks with a straight edge, either by hard point or with a light carbon or lead line.[15] The

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[12]Dard Hunter, Papermaking-The History and Technique of an Ancient Craft (New York: Alfred A. Knopf, Inc., 1947; Dover Publications, 1978), 194.

[13]Starch was usually used in the Orient for sizing paper, while gelatin (an animal size) was used in European papermaking. See: J. Irigoin, "Les premiers manuscrits grecs écrits sur papier et le problème du bombycin," Scriptorium IV (1950): 194.

[14]For some 14th century colophons, see # 39, 44, and 46 in: L. S. Xač'ikyan, ed., XIV Dari Hayerēn Jeṙagreri Hišatakaranner (Erevan, 1950). The scribe of San Lazzaro Ms. 1124, a Ritual dated 1648 from Karin (Erzerum), asks that future readers remember Ter Melk'un, who polished the paper for this manuscript. Ivo Mattozzi, Produzione e commercio della carta nello stato veneziano settecentesco (Bologna, 1975), p. 49 note 90, discusses a method of burnishing paper by scribes in the Ottoman Empire.

[15]Leaves can also be ruled with a rake-like instrument. See: J. P. Gumbert, "Ruling by Rake and Board," in The Role of the Book in Medieval Culture, ed.

majority of the manuscripts examined in this study were ruled and still had prickings evident, although it should be noted that prickings can sometimes be cut off if the margins are trimmed. In most of the manuscripts examined, prick marks were only found on the outer margins, and not in the gutter.[16] Vertical ruling lines dividing the columns of writing could also be found, and these were occasionally colored red or even multicolored for decorative purposes.[17] Prickings were also often evident at the head and tail of these vertical lines.

P. Ganz, Vol. 1 [Bibliologia 3 & 4] (Turnhout: Brepols, 1986), 41-54.

[16]Only San Lazzaro Ms. 2225, the Urbat'agirk' (the first Armenian printed book, printed in Venice in AD 1511) had some unusual prickings in the gutter. These were located at the angle of each V-notch (see section in this Chapter titled Sewing Preparation), and were made when the leaves were already folded into quires. The purpose of these prickings is not clear, but they may have been made to mark the place where the notches were to be cut. They do not seem to have any relation to ruling lines (which would not be necessary in a printed book). Similar prickings are mentioned in: Léon Gilissen, La Reliure Occidentale Antérieure à 1400-d'après les manuscrits de la Bibliothèque Royale Albert Ier à Bruxelles (Turnhout: Brepols, 1983), 91-92. In Gilissen's example, the prick marks are located at each sewing station (which are not V-notches).

[17]San Lazzaro Ms. 1571, a Ritual made between 1704 and 1709 in New Julfa (Isfahan), had multicolored vertical lines between the two columns. For a study of this manuscript see: Sylvie L. Merian, "From Venice to Isfahan and Back: The Making of an Armenian Manuscript in Early 18th Century Persia," in The Compleat Binder: Studies in Book Making and Conservation in Honour of Roger Powell, ed. by Guy Petherbridge. In press.

Rulings can be made another way, however, by using an instrument called a ruling frame (in Armenian, toŕašar), which is a board with parallel strings or wires stretched across it.[18] The slightly dampened paper or parchment would be pressed against the frame, with the strings or wires causing a protrusion and therefore a raised ridge on each leaf, making ruling lines for writing on. Columns can also be marked out with a ruling frame. These raised ridges are less visible than drawn lines and are probably less distracting to the reader. My observations on this feature are incomplete for this study since during the early period of this research, I did not record detailed information on the ruling and pricking. However, at least three manuscripts in this sample definitely used a ruling frame made with string for marking off ruled lines, since the twist of the string could clearly be discerned upon close examination of the raised ruling lines: for example, San Lazzaro Ms. 1571, a Ritual written on paper and made between 1704 and 1709 in Nor Erevan (a neighborhood of New

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[18]Abrahamyan, Hayoc' Gir ev Grč'ut'yun, 287. Abrahamyan describes a ruling frame used by Armenian scribes in which the strings are made of gut. I examined an Arabic ruling frame (mastara in Arabic), at the Beinecke Library of Yale University (Arabic Ms. 198), where the ruling frame is attached to the cover of the binding of an 18th century Arabic manuscript, and is made of strings. Another one, made in the 17th or 18th century, can be found at the Metropolitan Museum of Art in New York in the Islamic Department (acquisition number 1973.1).

Julfa, Isfahan)[19]; a parchment Gospel dated AD 1651 from Tatew (San Lazzaro Ms. 1476); and a parchment Hymnal from Cafay, Crimea dated AD 1646 (Union Theological Seminary Arm. Ms. 1). Ruling frames were thus used even in later periods, and in both parchment and paper manuscripts.[20]

One group of five manuscripts with unusual ruling lines should be mentioned. In this group, the indented horizontal ruling lines were "double-spaced." That is, widely spaced lines were produced, with a line of text written in the normal way (using each ruled line as a guide), but with another line of text copied in between each ruling line. The manuscripts ranged in date from AD 1415 to AD 1542; three were from Xlat'[21], one from Van (dated AD 1533)[22], and the last one was copied in Jerusalem in AD 1415.[23] These ruling lines were not produced with a

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[19]S. Merian, "From Venice to Isfahan and Back..."

[20]In Hayoc' Gir ev Grč'ut'yun..., 287, Abrahamyan incorrectly states that such ruling frames were used in early periods for ruling parchment only and not paper, which he believes would become deteriorated if dampened.

[21]San Lazzaro Ms. 280, a Bible copied between AD 1418-1422; San Lazzaro Ms. 932, a Ritual copied in AD 1459; and British Library Or. 2707, a Gospel copied in AD 1542 in Xlat' at the village of Soǯac. Both Mss. 280 and 932 were copied "under the protection of the eleven altars" (?) [ěnd hovaneaw <ža> xoranac's]. It is not clear what this signifies.

[22]San Lazzaro Ms. 1191, a Gospel dated AD 1533.

[23]Yale University Beinecke Library Ms. 445, a Collection of Canticles copied in Jerusalem in AD 1415 at the monastery of St. James (Surb Yakob).

ruling frame, because they all were found to have fore-edge prickings which corresponded to each horizontally indented line, in addition to the head and tail prickings used to mark off the vertically drawn lines. With more data (a group of five manuscripts is a very small sample) this distinctive ruling type might be found to be indigenous to the Lake Van area in the 15th-16th centuries (the Jerusalem manuscript may have been copied by a scribe trained around Lake Van, who made a pilgimage to the holy city).

An interesting feature was noted regarding the ruling lines and the script used--it seems that in manuscripts written in erkat'agir (or majuscule) script, the writing occurred above the ruling line (as we might write today on lined paper).[24] Most manuscripts written with bolorgir (minuscule) script, on the other hand, were usually written so that the letters hung down from the ruling line.

The ruling of the leaves could be divided into one, two, or, rarely, three columns of writing. Only one manuscript in this sample was found to have folios ruled with three columns; San Lazzaro Ms. 623, a complete Bible copied in Persia. In this very thick Bible (the

[24]My data is incomplete for this feature since I did not record it in my early research. However, San Lazzaro manuscripts 1635, 888, 68, Kurdian 25, and 196 were all written in erkat'agir and were written above the line.

manuscript text was 11 cm. thick), the last four quires were ruled three columns per page. This may have been done to economize on paper, since the book was already extremely bulky.

The next step in the process would be to fold the leaves into quires (also known as signatures or gatherings). The number of leaves per quire varied with the size of the book, thickness of the material, and other factors.[25] It would have been at this point that the pages would have been written on, decorated, or illuminated, rather than after binding, notwithstanding the fact that many manuscript illuminations inaccurately depict scribes (such as the four Evangelists) writing in bound books. There are a number of reasons for this: the first and probably most important reason is that a scribe might not always be able to estimate correctly the number of leaves necessary for a given work, and copying in a pre-bound book might cause one to be short of pages or conversely end up with wasted blank leaves at the end. Second, it would be easier to write on one leaf and allow it to dry, rather than waiting before turning the sheet so that the ink or pigment would not offset onto the facing page. Lastly, if there were various contributors working on a

[25]It was not always possible to collate and determine the number of leaves per quire of many of the manuscripts because they were in such delicate condition that it seemed unwise to handle them excessively.

manuscript (such as more than one scribe, or a scribe and an artist) it would be more efficient to distribute unbound sections of the book to the contributors rather than having to wait for the first person to entirely finish his task in a pre-bound book.

The ink of most of the manuscripts which I examined was a deep, black ink, and therefore probably a carbon ink. Only rarely did I see manuscripts with brown ink which had attacked and damaged the paper or parchment upon which it was used, usually an indication of an acidic iron-gall ink. Scribes usually prepared their own inks, but according to some colophons, not all Armenian scribes knew how to make ink and often sought an inkmaker.[26] Red and blue inks were also seen in some manuscripts, usually used for section or chapter headings, or similar rubrication.

The quires had to be kept in correct order for binding, and one common way of accomplishing this would be to number them in the order in which they were to be bound. The quire number would usually be written on the first and last folio of a quire, at the center of the bottom of the page. Generally, the normal Armenian numbering system was used for this,[27] that is, the letters

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[26]Abrahamyan, Hayoc' Gir ev Grč'ut'yun, 284.

[27]Note that the numbering system used was not recorded for many manuscripts examined in the early stages of this research.

of the alphabet were used as numbers, where the first ten letters stand for numbers 1 through 10, the eleventh letter stands for 20, the twelfth for 30, and so on up to 90. Then the nineteenth through twenty-seventh letters correspond to numbers 100 to 900, etc. In this system, which I will call normal or numeric quire numbering system, the the letters "žե" would stand for the number 15, since "ž" stands for 10 (as the tenth letter of the Armenian alphabet), and "e" equals 5 as the fifth letter of the alphabet. (See Figure 20 for a chart depicting this system, and Figure 2 for a photo of numbered quires from a 17th century manuscript). One unusual manuscript had quire numbers not only using Armenian letters as just described, but also using Greek letters and the Arabic numerals used in the eastern part of the Arab world, all of which corresponded to the same number as indicated in Armenian.[28] This manuscript showed extensive evidence of rebinding. It is possible that a later binder wrote these Greek and Arabic numerals on the quires as an aid to rebinding the manuscript. However, it seemed that the ink used for the quire markings and the ink used for writing

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[28]San Lazzaro Ms. 600, a Gospel copied in AD 1269 in Sis (Cilicia). The quire numbers in most of the front part of the manuscript were cut off when the margins were trimmed probably during rebinding, but the quires towards the back of the book still retained their numbers.

the text were the same. Scientific analysis of the ink would probably be necessary to verify this.[29]

Eight of the manuscripts in this sample in which the numbering system was recorded used a different system.[30] Instead of the letters of the Armenian alphabet being used as numerals (as described above), they were simply used as letters of the alphabet. That is, the eleventh letter was used on quire 11, the twelfth letter on quire 12, etc. I will call this the alphabetic system of quire numbering. For example, the letter "k" symbolized the number 15, since it is the fifteenth letter of the alphabet, and was used on the fifteenth quire. (See Figure 21 for a chart.) The manuscripts in this sample using the alphabetic quire numbering system were copied between AD 1193 and AD 1283, and six of them were definitely copied in various parts of Cilicia.[31] One was copied from the village of Kan in Karin

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[29]For information on ink analysis, see: Richard N. Schwab et al., "Cyclotron Analysis of the Ink in the 42-line Bible," Papers of the Bibliographical Society of America 77 (1983): 285-315; and Richard N. Schwab et al., "New Evidence on the Printing of the Gutenberg Bible: The Inks in the Doheny Copy," Papers of the Bibliographical Society of America 79 (1985): 375-410.

[30]There may be more manuscripts using this numbering system in this sample, but this feature was not recorded in the early stages of this research.

[31]Five of the six manuscripts were from the San Lazzaro collection: Ms. 1635, a Gospel dated AD 1193 from Skewṙay Vank' (Cilicia); Ms. 696, a Bible dated 1201 from Hṙomkla (Cilicia); Ms. 346, Writings of Early Authors, dated 1220 from Drazark (Cilicia); Ms. 641, a Gospel dated 1256 from Cilicia; and Ms. 900, a Gospel dated 1269 from Maš'kawor' (Cilicia). The sixth manuscript is now

canton,[32] and the last one is of uncertain date and provenance, although at least one scholar had tentatively placed it as having been copied in 12th-13th century Cilicia.[33] This unusual quire numbering will be further discussed in Chapter 6.

Catchwords were seen in only a few manuscripts. A catchword is a word written at the end of the last page of a quire which repeats the first word of the next quire, thereby enabling one to match up the quires in proper order. Later, they were placed at the end of every verso and then sometimes at the end of every page. They often appeared on the last page of a quire in a manuscript in order to aid the binder in correctly organizing the signatures, and later were used in printed books.[34] Three

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located at the Walters Art Gallery (Ms. W 538), and was written in AD 1193 at the hermitage of Pawłoskan in Cilicia.

[32]San Lazzaro Ms. 1313, a Gospel dated AD 1283.

[33]San Lazzaro Ms. 196, a Gospel missing its colophon. It was tentatively dated to the 12th-13th centuries by Fr. Sargisean, who believed it may have been copied by a student of Nersēs Lambronac'i, while Fr. Janashian argued for an 11th century date, believing it to have been produced in Greater Armenia. Fr. Mesrop Janashian, Armenian Miniature Paintings (Venice: Armenian Press of San Lazzaro, 1966), 32-34. Fr. Barseł Sargisean, Mayr C'uc'ak Hayerēn Jeṙagrac' Vol. 1, (Venice: San Lazzaro Press, 1914), 473.

[34]Matt T. Roberts and Don Etherington, Bookbinding and the Conservation of Books-A Dictionary of Descriptive Terminology (Washington, D.C.: Library of Congress, 1982), 48.

printed books seen in this sample used catchwords,[35] but seven late manuscripts (mostly from the 17th-18th centuries) also included them.[36]

A few manuscripts were provided with a type of page marker, small pieces of fabric (1 cm square) glued or pasted onto the fore edge of some pages, presumably as an aid to turning to a specific section of the manuscript. These occasionally also had hanks of thread sewn through them which would stick out from the fore edge of the book. See Figure 13. Other manuscripts were also made with what appear to be cloth page protectors, large pieces of fine fabric (usually silk), glued on one side or even sewn into the text. These were placed over full-page illuminations, apparently to protect the artwork.[37]

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[35]Seen in both copies of The Lives of the Fathers (Haranc' Vark'), printed in New Julfa in 1641 (San Lazzaro Ms. 1527 and the Eton College Library copy), and the Gospel printed in Venice in 1816 now located at the American Bible Society in New York City.

[36]Morgan Library M 437 (16th c.?); a Psalter at the Library of Congress with no call number (but labeled "Gift of Alice Adanalian"); Catholic University Arm. Ms. 1 (AD 1662); Beinecke Library (Yale University) Arm. Ms. 1 (17th-18th c.?); UCLA Arm. Ms. 29, a Ritual from 1817, Iran; UCLA Arm. Ms. 52, a book of Homilies bound in 1710 in Isfahan (text date and place unknown); and UCLA Arm. Ms. 58, a Miscellany also of unknown date and provenance, but bound in 1725 in Isfahan. This last manuscript had catchwords at the bottom of each page, not just at the end of each quire.

[37]For example, San Lazzaro Ms. 1594, a Gospel copied in AD 1609 in Isfahan. According to Dr. Nicholas Pickwoad, such silk "page protectors" are not uncommon in Western manuscripts, although they may be later additions.

Sewing Preparation

The gatherings were then prepared for sewing. Since the sewing would go through the fold of each quire, a hole must be made at each point where the needle and thread had to pass through. These points are called the sewing stations. Armenian binders usually cut a small V-shaped notch at each of these points on the fold. (See Figure 2). These notches were found in 82% of the manuscripts in this sample. The same type of notching is also used in Greek manuscripts, and has been given the French name grecquage by bookbinders.[38] Along with facilitating the activity of sewing, these notches had the effect of recessing the sewing and the cords upon which the sewing had been made. The cords and the sewing around them

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[38]Berthe van Regemorter, "La reliure des manuscrits grecs," Scriptorium VIII (1954): 5-6. See Chapter 3 for further discussion on notching in Greek manuscripts. This feature is not usually found in either European or Islamic manuscripts, where either a punched hole or a sawed slit is used. Gulnar Bosch et al., Islamic Bindings and Bookmaking (A Catalogue of an Exhibition. The Oriental Institute. The University of Chicago May 18-Aug. 18, 1981) (Chicago: The University of Chicago, 1981), 46. Note that the signatures of the 7th c. Northumbrian Stonyhurst Gospel were cut with small V-notches. See T. Julian Brown, ed., The Stonyhurst Gospel of St. John with a Technical Description of the Binding by Roger Powell and Peter Waters (Oxford: The Roxburghe Club, 1969), 45-55. This manuscript has a number of features often found in Coptic bindings, and it has been hypothesized that Coptic influence was present in this work; however, it is not clear from the published information on Coptic bindings how common these V-notches actually were.

neatly recess into the notches, which is why the spines of Armenian manuscripts are smooth and do not have raised ridges (called raised bands) on their spines as many Western European manuscripts do. There are commonly three or four notches (and therefore three or four sewing stations), although there may be as many as five, six or seven notches.[39] One rebound manuscript was found with 11 notches.[40] The notches can usually be seen in the gutter when opening the text. Close observation of the notches can also help in determining whether a manuscript had been rebound. Since the notches were made specifically for the needle and thread to pass through when sewing, if the notches are no longer being used as sewing stations and have no obvious function, it is almost certain that the book has been pulled apart and resewn. A close examination will probably reveal that new holes or notches were punched or cut through the folds to be used as new sewing stations. The earliest manuscripts seen in this

[39]One manuscript was found with only two notches: San Lazzaro Ms. 648, a Ritual copied in Trebizond in AD 1637. There is no evidence of rebinding. Another unusual feature was found in this manuscript: two threads could be seen in the center of the quires, meaning that either a double thread or two-needle sewing was used in sewing the text block together.

[40]San Lazzaro Ms. 1012, a Gospel copied in Cilicia (Hṙomkla) in AD 1357 in Cakoł̇biwr village. This manuscript was rebound and some of the notches were not being used in its present binding. It is possible that the high number of notches results from additional notches being cut during a later rebinding.

study were found to have V-notches and were dated AD 1193,[41] and the latest one with V-notches was a Ritual copied in AD 1714 in New Julfa (Isfahan).[42]

Variations in the notching were seen in almost 29% (or 48) of the manuscripts. In these manuscripts, V-notches were found in combination with others cut in the shape of a W, a half circle, or a square. There were also four manuscripts with all the notches cut as half-circles,[43] and one manuscript in which the notches were all

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[41]Walters Art Gallery Ms. W 538, a Gospel written on parchment, probably from Cilicia. This manuscript had been rebound, however, and the V-notches were no longer being used. San Lazzaro Ms. 1635, another Gospel written in Cilicia (Skewṙay Vank') in AD 1193, and rebound in 1972-74 in Padua (at the Abbazia Santa Giustina) also had evident V-notches. The quires had apparently been refolded when the manuscript was rebound, since the original V-notches were no longer in the gutter, but were located about 1 cm. away from the present center fold of the quire. They were no longer being used as sewing stations, obviously.

[42]San Lazzaro Ms. 2035. This manuscript was bound in a traditional Armenian manner and there was no evidence of rebinding, although the upper board was missing.

[43]Eton College Library's Lives of the Fathers, printed in AD 1641 in Isfahan; Vatican Library Borg. Arm. 85, a Gospel copied in AD 1635 in Amida; San Lazzaro Ms. 1485, Matthew of Edessa's History, copied in 1666-70? in Isfahan but bound in AD 1698 in Isfahan (according to the inscribed binding); and UCLA Arm. Ms. 58, a Miscellany copied at an unknown time and place but bound in Isfahan in AD 1725, again according to the inscription on the binding. For a photo of these half-circle notches, see Bezalel Narkiss, ed., Armenian Art Treasures of Jerusalem (New Rochelle, N.Y.: Caratzas Bros., 1979), p. 108, figure 136, a Hymnal copied in AD 1602 by Sargis k'ahanay [priest] Xizanc'i the Younger (Jerusalem Patriarchate Ms. 1460).

cut as squares.[44] These unusual types of notching have not been described in any publication.

The most common variation encountered was the W-shaped notch (25 manuscripts). These W-notches were always located at the central two or three sewing stations. Often, it was evident that the supports at these points were made of thicker cords than the other support cords, or consisted of four cords instead of two, consequently needing a larger space to be recessed.[45] The majority of the manuscripts with W-notches dated from the 16th and 17th centuries, and most of these were in their original bindings. There were, however, a few manuscripts copied earlier than the 16th century and one dated AD 1701.[46] It should be kept in mind that at least twelve of the twenty-five books showed evidence of rebinding, and although the W-notches could have been cut in the quires when the manuscript was first bound, it is also feasible

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[44]British Library Or. Ms. 2668, a Gospel copied in AD 1437 in Balu, and rebound at some later time.

[45]An example of this is Union Theological Seminary Armenian Ms. 1, an AD 1646 Hymnal from Kafay (the Crimea), a manuscript with no evidence of rebinding. Four cords can clearly be seen at the central sewing stations, meaning that either four separate cords were used as supports here, or that two folded cords were used.

[46]The Gospel dated AD 1701 was copied in Zet'un (McGill University Arm. Ms. 3). Two Gospels copied in Cilicia in the 13th century formed part of this group, and a third one, perhaps from the 12th-13th century, might also be Cilician (San Lazzaro Mss. 69, 600, and 196). These last three manuscripts, however, were rebound.

that they were cut during a subsequent rebinding. The unrebound manuscripts were copied in widely varying places, including Maraš, Sebastia, Xlat', Cafay (Crimea), and Constantinople. W-notches may not, therefore, be a feature which is indigenous to a certain locale or monastery; however, a larger sample of manuscripts with this characteristic should be examined in order to confirm this.

The fourteen manuscripts made with square notches (usually in combination with V-notches) varied in date from the 13th to the early 17th centuries, although the greatest number (five) were copied in the 15th century in either Balu or Xlat'.[47]

Boards

The boards would probably be prepared next. They are almost always made of wood (89% or 148 manuscripts in this sample), but eight manuscripts, mostly late rebindings, were found to be pasteboard. Six manuscripts were missing their boards or were scrolls, and it was not possible to determine the board material for five others (which were mostly new rebindings). The type of wood used for making

[47]The manuscripts copied in Xlat' were San Lazzaro Ms. 280 (Bible, AD 1418-22) and Ms. 932 (Ritual, AD 1459). The Balu texts were British Library Or. Ms. 2668 (Gospel, AD 1437), San Lazzaro Ms. 1429 (Ritual & Canticles, AD 1469) and Ms. 1113 (Gospel, AD 1475)

these boards was not evaluated.[48] The boards are usually the exact same size as the text block, and are therefore lacking "squares" (the part of the board which is just the slightest bit larger than the text block on the three unsewn sides, common in Western European manuscripts after the 15th century and found on most printed hardback books made today).[49]

An interesting feature observed is that the grain of the wood is horizontal in 69% of the wooden boards. Only 11% had a vertical grain, the wood grain was not determinable or was not applicable in 19% of the books (for example, in scrolls or books with missing boards), and one manuscript had one board with a horizontal grain and the other with a vertical grain.[50] This is the contrary of most Western European manuscripts and Greek manuscripts, where the majority have the grain running vertically and therefore parallel to the spine of the

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[48]The methods I learned for the identification of wood in a course at the Institute of Archaeology (University of London) in July 1989 required a relatively large sample of wood to be sacrificed for the analysis, rendering these techniques inappropriate for my purposes.

[49]Bernard C. Middleton, A History of English Craft Bookbinding Technique 2nd ed., (London: The Holland Press, 1978), 283.

[50]San Lazzaro Ms. 1038, a Gospel copied in Amit' in AD 1373. It was last rebound in 1980-1982, but the old binding was saved and was examined for this study.

book.[51] Western bookbinders traditionally place the grain of the wooden boards (and the paper grain, cloth grain in 19th c. bindings, and cardboard or pasteboard covers used in later books) parallel to the spine.[52] This is generally done to minimize stress on the book. Why then, do the Armenian craftsmen consistently cut their boards with the grain running horizontally, and therefore perpendicular to the spine rather than parallel? The next step in their preparation should answer this question.

Several holes would be drilled through the boards one or two centimeters from the spine, matching the number and placement of the sewing station notches. Each sewing station has a corresponding hole, which was used to attach the boards to the text block. Additionally, more holes would be drilled at the head and tail of the board near the spine, which were used to tie-down the endbands (see the section in this Chapter on Endbands, and Figure 5). The wooden boards are usually between 2 and 5 mm. thick (the average thickness is about 3.8 mm), which is quite thin. If the grain of the wood were running vertically,

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[51]Guy Petherbridge, Workshop--"Traditional Greek Bindings 14th-18th Centuries", Columbia University, New York, N. Y. February 22, 1986. Carlo Federici and Kostantinos Houlis, Legature Bizantine Vaticane (Rome: Fratelli Palombi Editore, 1988), 27, 79-80.

[52]Léon Gilissen, La Reliure Occidentale Antérieure à 1400 (Brepols: Turnhout, 1983). All photos of wooden boards show the grain running vertically.

and three or four holes (or possibly more, depending on the number of sewing stations) were drilled on a straight line parallel to the spine and therefore on the grain line, these thin wooden boards would probably crack right on that line. Cutting the wood with the grain running horizontally eliminates this problem. Horizontal cracks could still occur and can be seen in some manuscripts (see Figure 5). However, in these cases the boards still remain attached to the text block and do not usually crack off, as they might had the grain been oriented vertically.

The next step, the sewing of the text block and its attachment to the boards, is one of the most complicated technical problems to be solved in the construction of a book. It must be done in such a way that the book is sturdy and strong and the signatures will not fall out after reading the book a few times, but neither must it be constructed in such a way that cannot be opened properly and with ease, which could happen if the text block had been improperly attached to the boards. A book which cannot be easily opened and read is as useless as a book which falls apart after a few readings, and these texts were definitely meant for use.

Sewing and Board Attachment

Before discussing the possible methods of sewing and board attachment which seem to have been traditionally

used by Armenian bookbinders, it is necessary to explain briefly some facts and terminology concerning sewing. The sewing of a book can be either "supported" or "unsupported." Unsupported sewing is believed to be the older method of sewing a text block together. Here, the "...sections are connected together directly by the thread alone."[53] The threads are sewn through the fold of each gathering and linked by some type of chain stitch at the sewing station with the gathering directly below it. No supports such as cords or tapes are used. There are different methods used for unsupported sewing, with a variety of stitches and linking methods possible. The oldest extant codex books, which are Coptic, were bound using an unsupported sewing structure, and this technique has continued up to modern times. Mechanized Smyth sewing is a form of sewing without supports.[54] Islamic, Byzantine, Ethiopian, and other East Christian books were traditionally sewn using a variety of unsupported sewing techniques. Some of these traditions will be discussed in detail in Chapters 3, 4, and 5.[55]

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[53]Gary Frost, A Vocabulary of Terms for Book Conservation Practice As Used in the Preservation/ Conservation Programs, Columbia University, photocopied class handout, 1984, p. 25.

[54]Idem, Codex Format Bookbinding Structures--A Survey of Historical Types, photocopied class handout, 1984, p. 5.

[55]For information on Ethiopian binding techniques, see: Sydney M. Cockerell, "Ethiopian Binding," Designer

Supported sewing makes use of some kind of support for the sewing thread to go around to strengthen and better reinforce the text block. When the gatherings are sewn together, each stitch coming out of the fold of each signature must go around a cord, leather thong, or linen tape perpendicular to the fold and used as a support. The earliest extant bindings sewn on supports are from Fulda, Germany and date from the 8th century.[56] This type of sewing eventually led to the development of the sewing frame in Europe, probably around the 11th century,[57] although sewing on supports can be accomplished without a sewing frame. Supported sewing enabled much larger books

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Bookbinders Review 10 (Autumn 1977): 5-9; and Berthe van Regemorter, "Ethiopian Bookbindings," The Library 5th series, XVII, no. 1 (1962): 85-88. Sergew Hable Selassie, Bookmaking in Ethiopia (Leiden, 1981), has interesting information on other aspects of bookmaking, although little on binding structure or technique.

[56]Paul Needham, Twelve Centuries of Bookbindings: 400-1600 (New York: Oxford University Press, 1979), 58. Berthe van Regemorter, "Evolution de la Technique de la Reliure du VIIIe au XIIe Siècle," Scriptorium II (1948): 275-277, 282. J. A. Szirmai, "Old Bookbinding Techniques and their Significance for Book Restoration," in IADA Preprints: 7th International Congress of Restorers of Graphic Art, 26th-30th August 1991 Uppsala/Sweden, ed. K. Jonas Palm and Mogens S. Koch, p. 3 (Uppsala?, 1991?).

[57]Frost, Codex Format Bookbinding Structures..., 5. Sewing frames certainly existed by the 12th century, since a manuscript illustration (Staatsbibliothek Bamberg Ms. Msc. Patr. 5 [B. II. 5], f. 1v) dating from this period shows a monk sewing a book on supports with the aid of a sewing frame. For a reproduction of this illustration, see: Scriptorum Opus--Schreiber-Möche am Werk (Weisbaden: L. Reichert, 1971), 4; or van Regemorter, "Evolution de la Technique..., 281 and pl. 19.

to be made because the supports which were laced into the boards made the books sturdier. Different types of supports and different types of stitches can be used, leading to great variations in sewing methods.[58] Most Western European manuscripts bound after the mid-8th century use some form of supported sewing.[59]

After the text block has been sewn together it must be attached to the boards in some way. When supports were used in the sewing, the ends of the cords, thongs, or tapes (called slips), now protruding perpendicularly from the spine, would be threaded through various kinds of holes, tunnels, or grooves drilled into the boards.[60]

Text blocks sewn without supports obviously do not have slips which can be laced through the boards, so other methods must be used. For example, the boards may be attached to the text block by using adhesive on the spine lining and the hinges secured to the text, as is done in most Islamic manuscripts.[61] Another method would be to use

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[58]For a few examples of supported sewing on double cords, see Gilissen, La Reliure Occidentale..., p. 16, fig. 5. See Arthur Johnson, The Thames and Hudson Manual of Bookbinding (London: Thames and Hudson, 1978, 1984 reprint), p. 44, figure 18 for five different types of supported sewing.

[59]Szirmai, 3-4. See also van Regemorter, "Evolution de la Technique...," passim.

[60]Gilissen, La Reliure Occidentale..., pp. 20 through 52 show many examples.

[61]Bosch et al., 56. See Chapter 5 for further details on Islamic binding techniques.

some type of cord anchors which are threaded though holes in the boards, to which the sewn text block would be tied in a separate step.[62]

In the majority of Armenian manuscripts examined here (73%, or 122 manuscripts), board attachments which appear as "loops" could be seen on the inside boards (Figure 5). Even when the inside boards were covered with a cloth lining, one could often discern these loops below the cloth.[63] At first it was difficult to determine whether these books were sewn on supports since the sewing was recessed into the notches. However, after I had the opportunity to examine a number of disbound and/or extremely damaged bindings, it became clear that the books were definitely sewn on supports, usually double cords.[64] A support cord was also found at every sewing station. There were usually no unsupported kettlestitches.[65]

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[62]See the section on Syriac bindings in Chapter 4 for additional information.

[63]See section in this chapter titled "Doublures" for further discussion on these cloth linings.

[64]There were also some manuscripts in which the cords at the central sewing stations were made up of four cords rather than two (for example, Union Theological Seminary Arm. Ms. 1, a Hymnal copied in 1646 in Cafay, the Crimea). This would mean that either four separate cords were used here, or perhaps two folded cords. Note that in this manuscript, W-notches (instead of V-notches) were cut at the central sewing stations, probably to accomodate the bulkier four cords.

[65]Only one manuscript in this study seemed to use unsupported kettlestitches--Union Theological Seminary Ms.

There are two possible techniques which could have been used by Armenian binders which would result in these type of loops.[66] In the first method, the quires would be sewn on double cords at each sewing station using a herringbone stitch. Even the kettlestitches were sewn on supports. It is not known, however, whether a sewing frame was ever used. Although it is not imperative to use a sewing frame for this step, its use is a possibility; however, at this point I have no concrete evidence for it. The herringbone stitch could be readily observed in bindings where the spine leather and cloth spine lining were torn or missing (see Figures 3 and 4). When the sewing of the text block was completed, the free ends of the support cords would protrude at each sewing station at both the beginning and end of the text block. These protruding double cords could now be threaded through the corresponding hole on the boards, and then would be tied together at the joint (see Figure 7 for a diagram).

In the second method, instead of sewing the text block together first and then attaching it to the boards

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Cage Auburn CB 58.5.1607 (a Gospel lacking its covers and copied in AD 1293). See Figure 4. This manuscripts was sewn at four sewing stations; support cords were evident at the two central sewing stations, while the outer two stations did not seem to have any support cords.

[66]Both techniques result in the "loops" described above. I made models which demonstrated that both methods are feasible.

in a separate step, as is commonly done in most occidental bookbinding traditions, the Armenian bookbinder may have combined these two steps into one. In this case, the support cord would have been folded in half, and the folded end pulled through one on the holes previously drilled in the board near the spine, forming a small loop. The two loose ends of the folded cord were then threaded through that loop and pulled tightly. This would result in a double support cord firmly attached to the board.[67] (See Figure 6 for a diagram). This procedure would have been repeated at each sewing station, forming a series of support cords for the sewing, attached not to a sewing frame but to one board. Each quire was then sewn with a herringbone stitch using these double cords as supports. Unsupported kettlestitches are not usually evident. When the sewing of the text block was complete, the two free ends of each of the folded support cords would have remained at each sewing station. These were threaded

[67]Berthe van Regemorter noticed the loops but at first did not quite understand the board attachment and believed the Armenian bindings to have been sewn without supports. See her article, "La reliure arménienne," Bazmavep no. 8-10 (1953): 200. However, about ten years later she wrote an article in which she mentioned the loop board attachment and described it correctly as supported sewing, although she did not include any photographs. She was the first to describe this folded cord method. This article was her last work (in conjunction with Jean Irigoin) and was published posthumously; see "La reliure byzantine," Revue Belge d'Archéologie et d'Histoire de l'Art XXXVI (1967): 123-124.

through the corresponding hole on the opposite board and were tied together at the joint, as described above (Figure 7).[68] See Figure 5 for an example of the board attachment.

It was very difficult to determine definitively which of these two methods were used, since most of the manuscripts were not deteriorated enough to be able to verify the technique. Even in the extremely damaged manuscripts or detached bindings, the tangled cords and threads, combined with dried adhesive and bits of cloth from the doublure or spine lining, often made it impossible to see precisely how the text block was attached to the boards. However, in a few disbound manuscripts in which the old covers had been saved, lengthy examination of the detached binding allowed me to determine that in these cases the support cords were indeed two separate cords and not one folded one.[69] There

[68]On a few damaged manuscripts (for example, UCLA Arm. Ms.58, a rebound or repaired Miscellany originally bound in New Julfa in 1725, and UCLA Arm. Ms. 74, a Biblical Lexicon and other texts written in 1696 in New Julfa) it seemed that the support cord at the first and last sewing stations was single but still formed a loop at the board attachment. The only possible explanation for a single cord to appear as a loop must be that the single cord was wrapped twice through the hole in the board, giving the appearance of a loop.

[69]San Lazzaro Ms. 888, a Gospel tentatively dated from the 11th-13th centuries and perhaps copied in Urhay. This manuscript was most recently rebound in 1980-1982 in Turin, but had been rebound at least once before since the severly trimmed leaves are the same size as the detached binding. The other example is San Lazzaro Ms. 68, a

is therefore not enough evidence at this point to state which of the two methods were actually used, although it is also possible that both techniques were used in different areas. The earliest unrebound manuscripts seen in this study were made with cord supports and date from the 14th century.[70]

If the loop board attachment and supported sewing method described is correct, it would probably be a unique development in bookbinding. To my knowledge no other tradition uses this particular method. Note that the Armenian bookmaking tradition appears to be the only one in the Near East which uses a supported sewing method. This will be demonstrated in Chapters 3, 4, and 5, and will be further discussed in the concluding chapter.

Flyleaves

Often vellum leaves from older discarded manuscripts would be sewn at the beginning and end of the text as flyleaves. They usually consisted of one large leaf folded in half and sewn through the fold as a quire would

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Gospel probably from the 9th-10th centuries from an undetermined provenance. This manuscript was rebound in 1981 in Rome at the Istituto Centrale per la Patologia del Libro.

[70]Library of Congress Armenian Ms. 4, a Gospel copied in Jerusalem in AD 1321, and Bibliothèque Nationale (Paris) Ms. Arm. 17, a Gospel from Ałrim city (the Crimea), copied in AD 1356.

have been, although sometimes they were sewn with only a stub. Most of these flyleaves were from Armenian manuscripts written in erkat'agir script (the older majuscule Armenian letters), but two manuscripts examined in this sample had vellum flyleaves from Latin manuscripts, and one manuscript used parchment leaves from a discarded Greek text.[71]

It is possible that after the sewing and board attachment has been completed, the edges of the book might be trimmed on some sort of a plow or with a knife, which would give us a book with the boards the exact same size as the text block (and no squares). However, the wooden boards may have been trimmed to the size of the signatures before the boards were attached.

Spine Lining

After the sewing and board attachment were completed, the spine would usually be lined with a single linen or cotton tabby weave cloth, usually white or beige in color. The cloth would be cut the height of the book but would be slightly wider than the spine, overlapping a few

[71]The manuscripts with Latin flyleaves were: New York Public Library Spencer Collection Arm. Ms. 2, a Hymnal which may be a 14th c. Cilician text, and Bibliothèque Nationale Mss. Or. Ms. Arm. 61, a Ritual from Constantinople dated AD 1668. The 17th? c. Gospel from the Pierpont Morgan Library (Ms. M 621) was made with flyleaves from a Greek text.

centimeters onto the boards, and it would be glued or pasted to the spine. The spine was probably lined to protect it and the sewing threads, to provide a uniform surface on which to adhere the leather, to reinforce the board attachment, and perhaps also to protect the paper or parchment leaves from any damage that the leather itself might cause (such as from tanning agents, etc.). A few manuscripts in this sample had multiple layers of fabric lining the spine.[72] In this sample, 65% of the manuscripts had a visible spine lining (in 29% of the manuscripts the spine lining was not visible or the information about this characteristic was not recorded). See Figure 8 for an example.

Endbands

The endbands were probably worked next.[73] They had a very important structural function: to reinforce and

[72]For example, the spine lining of San Lazzaro Kurdian Ms. 25, a Gospel from the 10th or 11th century, was made with three layers of cloth. This manuscript's binding was detached from the text. Freer Gallery FGA 50.3, a Gospel probably from the 12th century (its binding is also detached from the text), and T. Hazarian (ex-collection) #19 (a Gospel from Istanbul dated 1376, rebound in 1592 in the same city) both used two layers of cloth for the spine lining. All three of these manuscripts had been rebound at some point in their history. See the section on Syriac bindings in Chapter 4 for further discussion on spine linings made of multiple layers of fabric.

[73] Endbands are also commonly known as "headbands", although strictly speaking, headbands should only refer to those found at the head of the book while those at the tail should be called tailbands. "Endbands" and "headbands" will be used interchangeably here.

strengthen the book at the head and tail, forming another strong attachment between the text block and the boards.[74] In general, endbands consist of one or more cords or thongs placed across the head and tail at the spine and used as a core. The length of the core would be approximately the width of the text block, or might extend slightly around the boards, in which case it might be laced into the boards. The core would be sewn down around and through the fold of each quire, sometimes forming a kind of embroidery or braid (depending on the tradition). The sewing down of the core and the embroidery may be done as one procedure--in other words, the embroidery is not necessarily a separate process from the sewing down of the endbands.

Different cultures in different time periods have developed their own distinctive method of working headbands, with sometimes characteristic embroidery patterns. A typical style of endband has also developed in the Armenian bookmaking tradition. In Armenian manuscripts the endbands are usually made of one primary core and one to four secondary cores, all made of cord.[75]

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[74]Today most books are made with false headbands which are pre-sewn strips of embroidered cloth and are simply cut and glued onto the spine for decorative purposes. Additionally, in books with squares, they fill in the small space at the spine between the top of the text block and the top of the boards.

[75]Note that I was able to discern the number of cores in only a small number of manuscripts, since in most of

Because of the way in which they are tied down onto the boards, and since the boards are made without squares, they are raised an average of 5 mm. above the edge of the boards and text (which are flush with each other) and are called, not surprisingly, "raised endbands." The cores are longer than the thickness of the text block, and extend about 2-3 cm. around both the front and back boards. (See Figures 5 and 9). In the Armenian method, the primary core was attached in the following way: the thick cord was placed at the head or tail of the spine and was long enough to reach a few centimeters onto the head or tail edges of both boards. The part of the cord placed on the boards was attached to the book by a sewing thread which went over the cord and into the three to five holes in the board which were previously drilled for this purpose. When the sewing thread arrived at the spine, it went over the cord and into the center of each and every quire, coming out at the spine through the cloth spine lining. The procedure was continued until it reached the other board, tying it down through the pre-drilled holes as before. This primary sewing was used as a base for the secondary sewing.[76] See Figure 5. The secondary cores

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the bindings they were either not visible or were too damaged.

[76]Les tranchefiles brodées-étude historique et technique (Paris: Bibliothèque Nationale, 1989), 76-77 describes and illustrates the procedure for working the primary core of an Armenian endband.

would then be sewn and embroidered using more cord cores, usually of thinner diameter than that used for the primary sewing. It was not an embroidery done separately and applied on top of the primary sewing.

The Armenian binders used a distinctive embroidery style which formed a chevron design. The secondary sewing in Armenian endband-making uses one to four cores.[77] The book Les tranchefiles brodées-étude historique et technique describes an elegant and simple way of working the secondary sewing of the endbands, by using the primary sewing as a base.[78] Three colors of silk thread are usually used (most commonly red, black, and white), producing a zig-zag design which resembles two chevrons pointing in opposite directions.[79] See Figure 9. Almost all the Armenian bindings observed in this study were of the type described above, although the total number of

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[77]My observations of Armenian endband cores, when it was possible to observe them, indicated that there were usually three to five cores. However, Les tranchefiles brodées..., 78-79, indicates the use of only two cord cores, and Jane Greenfield and Jenny Hille, in Headbands-How to Work Them (New Haven, CT: Edgewood Publishers, 1986), 57-64, use four cords in their attempt to reproduce these endbands. The technicians at the Bibliothèque Nationale have apparently managed to correctly interpret the correct method for working these endbands. However, I disagree with their conclusions on the number of cores used.

[78]Les tranchefiles brodées..., 78-79.

[79]Greenfield and Hille, p. 57.

cores used does not seem to be consistent. Perhaps the number of cores used differs in bindings coming from different workshops. This is a characteristic which should be examined more closely in the future. The color combination of the silk secondary sewing might also be an indication of specific workshops.

Over 74% of the manuscripts (124 out of 167) examined here were made with the type of raised endband described above. An unusual feature was noticed in two manuscripts--at the area near the head and tail where the endbands begin to rise on the board, a small wooden wedge was positioned, perhaps to make a sharper angle at that point.[80] More examples of this wooden wedge must certainly exist, but it may be very difficult to discover since the endband must be damaged in a very precise location for it to be observable.

Doublures

We now have a sewn text block attached to wooden boards with a horizontal grain, lined with a cloth on the spine, and the endbands have been completed. The next step, even before covering the outside of the boards with

[80]San Lazzaro Ms. 149, a Psalter copied in 1455 in Trebizond, but rebound at some later unknown time and place in a traditional Armenian manner; American Bible Society Acc. No. 1816, a Gospel probably copied in the 13th-14th centuries, and rebound in 1649 in the village of Hapusi.

leather, is to line the inside of the boards in order to cover the bare wood. The most common material used for this lining or doublure was fabric, seen in 74% of the manuscripts in this sample, which could range from a coarse tabby weave linen or cotton cloth to a fine silk brocade. The fabric might be a plain single color or a patterned, striped, or stamped cloth. The fabric was usually of a higher quality than the cloth used to cover the spine, and was often quite decorative and colorful. The cloth would be glued or pasted to the wooden boards, completely covering the inside of the board and the various tie-downs and drilled holes used for the board attachment loops and the endbands. However, since the cloth is not thick, the raised board attachment loops and endband tie-downs beneath the cloth are often visible to the viewer. The cloth doublure completely covered the wood but often extended 1 or 2 cm. over the inner joint, effectively concealing a better view of the board attachment (see Figures 11 & 12).

The manuscripts which did not have cloth doublures usually had paper or vellum pastedowns glued or pasted onto the wooden boards. These were often new pastedowns or flyleaves not original to the binding. Some manuscripts, of course, had no doublures because they were lacking boards, were modern rebindings, or were highly

damaged and had probably lost their original cloth doublures.

Leather

At this point the book was ready to be fully covered with leather. Almost every book examined in this study which still had extant covers (and was not a modern rebinding) had been covered in leather (154 manuscripts or 92%). The leather was usually goat or calfskin and ranged in color from various light to dark brown tones, with some red, reddish brown, or burgundy. One large piece of leather was used, large enough to cover both boards and the spine with a few centimeters extra to turn-in on the inside of the boards. The leather was glued or pasted to the boards and the spine, and was trimmed and cut so that it would neatly turn-in on the interior of the boards. Almost all of the manuscripts examined for this study had neatly mitered corners on the inside boards, meaning that the two folded pieces of leather butted together perfectly. (See Figures 1 and 12). However, the turn-in usually necessitated a small slit near the inner joint in order for the leather to be able to reach up and cover the raised endbands, making four small leather tabs on the inside of the boards--one each at the head and tail of each board near the joint and the endbands. This slit was

recorded in 56% of the bindings examined in this sampling[81] (see Figure 12).

There are different methods for turning-in leather over the boards and for mitering corners--one common method is to cut the leather so that a small "tongue" is left in between the two folded-over pieces.[82] See Figure 1. Another is to just overlap the two pieces of leather, as was often done in many Coptic bindings.[83] But the Armenian bookbinders most commonly cut the pieces so that they neatly met at a 45 degree angle, without a "tongue" or any overlap.

Thirty-five manuscripts in this sample had a tiny, wooden peg stuck in through the leather and the wooden board at each of the four interior "tabs" made by the slit in the leather (described above). This was probably done to hold down that small tab of leather, which appears as if it might tend to pop up. Even though a slit has been made in the leather to accommodate the endbands, the leather is still being pulled and somewhat strained to

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[81]Note that in 32% of the manuscripts seen here, the slit was either not observable for some reason, it was not applicable (as in a scroll or a book lacking boards or leather), or the feature was not recorded. There may therefore actually be a higher number of manuscripts with this trait than it would at first seem.

[82]Middleton, A History of English Craft Bookbinding Technique, 151-152.

[83]Theodore C. Petersen, "Early Islamic Bookbindings and Their Coptic Relations," Ars Orientalis 1 (1954): 55.

reach these highly raised endbands. The earliest unrebound manuscript examined in this study with such a wooden peg was dated AD 1356 and was copied in the Crimea; the latest one was copied in AD 1710 in New Julfa (Isfahan).[84]

Fore-Edge Flap

A unique feature of Armenian bookbindings is the addition of a flap on the fore edge of the book, and 68% of the bindings in this sample either still retained the intact flap or had evidence of one (such as fragmentary pieces of leather or remnants of adhesive on the back board). This rectangular leather flap, usually lined with a piece of the same cloth doublure as the inside of the boards, covered only the fore edge of the book. The flap served not only a decorative function (it was often blind-tooled to match the tooling of the covers), but also protected the fore edge (see Figures 5, 10, 11, & 12). The fore-edge flap was almost always added on as a separate piece after the boards had been covered with leather.[85] It was usually the exact same type of leather,

[84]Bilbiothèque Nationale Mss. Or. Ms. Arm. 17 (Réserve), a Gospel copied in the Crimea in AD 1356; San Lazzaro Ms. 897, a Book of Solomon and the Prophets copied and bound in AD 1710 in New Julfa. Neither of these manuscripts showed any evidence of rebinding.

[85]Only one binding seen in this sample had a flap which was not a made from a separate piece of leather--Beinecke Library (Yale University) Ms. Vault 70, a small

indicating that it was most likely done at the same time as the original binding. The piece of leather used for the flap was cut larger than the width of the fore edge (usually about twice its width) and a few centimeters higher than the height of the book. This leather piece would be lined with a cloth doublure. It was then attached to the back board by folding it and gluing or pasting the folded part to the inside, over the already completely lined, turned-in and mitered back board. The part not attached formed the freely moving flap that we see on the outside of the book covering the fore edge, and was exactly the width of the fore edge. The inside of the flap was neatly turned-in and mitered in the same way as the leather on the interiors of the boards were. The flap was usually blind-tooled on the exterior, and the turn-ins might also be. Note that the flaps do not have an inner core of wood or pasteboard--they are made only of cloth-lined leather, although they were usually quite stiff from the adhesive used. The flaps of many manuscripts were either broken or torn off--they often broke at the fold where the leather had weakened from being folded back and forth during frequent use. On occasion the entire flap, including the interior section glued to the board, had

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Ritual book from Germanike (Maraš) dated AD 1694. This flap was actually an extension of the leather from the back board.

been torn off (or had fallen off). However, in these examples the inside of the board often included an impression or outline from the dried adhesive of that portion of the flap which had been glued to it, or there might even be patches or remnants of leather still stuck to the inside of the board.

The earliest dated manuscript (with no evidence of rebinding) which was made with a fore-edge flap seen in this study was dated AD 1321 and was copied in Jerusalem,[86] and the latest one is found on a Ritual copied in AD 1714 in Isfahan (New Julfa).[87] Two manuscripts with unusual flaps should be mentioned--they were made with Islamic pentagonal flaps (called a lisān in Arabic) which cover not only the fore edge but also reach over to the front board. Further details on the structure of Islamic flaps will be provided in Chapter 5. The contents of both these books are not commonly encountered--Spencer Collection Arm. Ms. 5 is titled the Jewish Bride and was probably copied in the 18th-19th century, and UCLA Arm. Ms. 73 is a Geomancy (art of divination by means of lines and figures) which was copied in Aleppo in 1625.[88] Neither of these

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[86]Library of Congress Arm. Ms. 4 (formerly Orien. Nr. East 6003).

[87]San Lazzaro Ms. 2035. This manuscript had no evidence of rebinding, although the front board was missing.

[88]New York Public Library, Spencer Collection, Arm. Ms. 5, The Jewish Bride, was written in the Turkish

books are Christian texts, nor were they copied by priests in monastic settings. They are not traditional Armenian bindings, but are Islamic in structure and appearance, and were probably bound by local Islamic binders. The UCLA manuscript was probably bound in Aleppo where the scribe, who was also the patron, copied it.

Edge Coloring

At this point the edges of the text block might have been colored. Most of the manuscripts (71%) had some kind of coloration (usually red) at the head, fore edge and tail, although a few examples were seen with other colors, such as magenta, black, burgundy, green, or yellow. A small number of manuscripts were found with more decorative designs, such as San Lazzaro Ms. 1173 and New York Public Library Spencer Collection Arm. Ms. 6 which were embellished with leafy patterns at the head and tail,[89] Walters Art Gallery Ms. W 543 with a curved

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language using the Armenian alphabet, probably in the 18th-19th century. The author, "Irimea", has been identified as the 17th century Armenian historian and poet Eremia Č'ēlēbi K'ēōmiwrčean, according to A. Sanjian, A Catalogue of Medieval Armenian Manuscripts..., 494. UCLA Arm. Ms. 73 is bound in a traditional Islamic manner. See Chapter 5 for information on Islamic binding techniques.

[89]San Lazzaro Ms. 1173 is a Ritual copied in AD 1345 in Sis (Cilicia) but rebound later, and the NYPL manuscript is a rebound Gospel, perhaps dating from the 17th century.

design,[90] or San Lazzaro Ms. 623 whose edges are decorated with what appears to be a floral motif.[91] Only three manuscripts seen in this study had gilt edges, and all three had been rebound, for example Morgan Library Ms. 749, a Gospel from Van dated AD 1461 which was last rebound in 1981.[92] The red color is a dull, brick or clay-like color. It may be what is known as Armenian bole by bookbinders, which is a red clay substance often used as a primer before gilding (and still used today for that purpose), although it can also be used alone for decorative purposes. It would be interesting to chemically analyze this red coloration in order to determine its composition more precisely. There is no evidence, however, that the edges of these books ever had any gold over the red coloring.

Decorating edges of books is certainly not unique to the Armenian bookbinding tradition, but in 63% of the

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[90]Walters Art Gallery Ms. W 543 is a Gospel copied in AD 1455 in Xizan and restored in 1617.

[91]San Lazzaro Ms. 623 is a rebound Bible copied in AD 1648 in Persia.

[92]This manuscript was rebound at least twice, the last time in 1981 by Deborah Evetts of the Morgan Library; the gilding is recent. The other manuscripts with gilt edges are San Lazzaro Ms. 1556, a Gospel from Sebastia copied in 1591, which, although not actually rebound, had its old leather recovered with a new piece of leather which had been gold-tooled, and it is likely that the edge gilding dates from this repair; and Grolier Club (New York) Ms. Eastern No. 16,056, a rebound Gospel of uncertain date and provenance.

manuscripts with colored edges, an unusual feature was noted. Commonly, in Western European or Islamic books for example, if the edges have been decorated by coloring, sprinkling, gilding, etc., the coloration will reach all the way to the spine at the head and tail of the book. In other words, the edges are completely colored or gilt on all three of the book's edges. However, in the Armenian manuscripts under discussion, this did not occur--the red color abruptly stopped usually ½ to 2 cm. away from the spine at the head and tail. In thirty of the manuscripts with colored edges (or about 25%) this uncolored portion formed a horseshoe-shape (see Figure 9).[93] It might also be precisely outlined with a single or double black line (seen in 26 manuscripts). The horseshoe shape exactly followed the area of the raised endbands and spine. Since the area left uncolored at the head and tail of these Armenian books precisely follows the space where the raised endbands would be sewn, it is probable that it was purposely left uncolored so that the fine silk thread used for the embroidery of the endbands would not rub against the red on the edges and pick up color and perhaps be stained.

[93]The actual number may be higher because there were also 31 manuscripts (out of 118 with colored edges) where this trait was either not recorded or, although evidence of coloring could clearly be discerned on the edges, they were too damaged or worn to determine any further details about them.

It is not known precisely at what point in the construction of these books that the edges were colored. It is certainly possible that the tinting could have been added on long after the books were bound, perhaps even centuries later. In at least one manuscript, however, we can be sure that the coloring occurred at some point after the boards were covered with leather and not before, because traces of the red substance were found on the leather itself.[94]

Decoration

The leather was usually tooled after it had been glued or pasted to the covers. Tooling is a method of decorating leather by using metal implements such as a small stamp with a handle on one end, impressing the tool upon the leather to form a recessed design. Besides stamps, fillets or rolls can also be used. A fillet is a revolving wheel with one or more raised bands on its circumference used to impress a line or lines on the leather.[95] A roll is similar to a fillet but instead of having a raised band on its circumference it will have a

[94]San Lazzaro Ms. 123, a Psalter in its original binding copied in AD 1668 at the Church of St. Sargis in Constantinople.

[95]John Carter, ABC For Book Collectors, 6th ed. with corrections and additions by Nicolas Barker, (New York: Granada, 6th ed. 1980; reprint ed. 1982), 97.

more elaborate design, such as a floral motif or a geometric design. It can be rolled on, and therefore repeated as a border, for example. Tooling can be done by two methods--the metal tool can be heated and pressed upon the leather, or the tool can be left unheated and used on damp leather. Using an unheated tool on damp leather does not discolor the leather very much, while a hot tool will tend to darken the impressed area and give a sharp impression.[96] However, it takes a trained eye to be able to distinguish between the two methods on the finished product.

If gold leaf is used in the tooling, the resulting recessed design is said to be gold-tooled; when no gold is used, the design is said to be blind-tooled. Only seven manuscripts in this sample were found to have any evidence of gold tooling. Of these seven, four were rebound or had new gold-tooled leather placed over the old, one was a 19th century printed book from Venice, and was probably bound there,[97] and one is an anomalous manuscript bound in a traditional Islamic manner.[98] Only one manuscript in a

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[96]Middleton, A History of English Craft Bookbinding Technique, 167.

[97]This AD 1816 printed Gospel belongs to the American Bible Society (no call number), and was included in this sample because it had a silver cover fitted over the boards. It was bound in a 19th c. European binding.

[98]New York Public Library Spencer Collection Arm. Ms. 5, "The Jewish Bride," probably 18th-19th century.

typical Armenian binding which had no evidence of rebinding showed some possible traces of gold tooling.[99] Another manuscript, Union Theological Seminary Arm. Ms. 1, was interesting in that parts of the tooled design had a red color in the impressed areas.[100] This red color is probably not an indication of gold-tooling, however; leather which is to be gold-tooled is prepared with glaire (egg white and vinegar or water), and not Armenian bole.[101]

The majority of the manuscripts, however, were blind-tooled (128 manuscripts or almost 77%). Most of the others were either modern rebindings covered with cloth or paper, were too damaged or worn to determine if they had once been tooled, or were covered with a silver plaque which prohibited the viewer from seeing any tooling which might have decorated the leather below it. A few manuscripts were covered with plain, undecorated leather.[102] One unusual manuscript was decorated with what appears to be a raised and painted lacquer cross over

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[99]British Library Or. 2707, a Gospel dated 1542 from Xlat'.

[100]Hymnal, dated 1646 from Cafay, the Crimea.

[101]Middleton, A History of English Craft Bookbinding Technique, 174.

[102]New York Public Library Manuscripts Division Arm. Ms. 1 (Philosophical Works of David the Philosopher), copied in AD 1639-1640 but rebound later; and McGill University Rare Books and Special Collections Arm. Ms. 3, a rebound Gospel copied in AD 1701 in Zet'un.

gessoed leather. This manuscript is a Gospel copied in AD 1609 in New Julfa (Isfahan), Iran, during the early years of the formation the Armenian community there,[103] and may have been influenced by Islamic lacquerwork.[104]

The leather fore-edge flap was often blind-tooled to match the decoration of the upper and lower boards. (See Figure 10 for such a flap). On occasion, the turn-in may be outlined with a fillet and/or may be tooled with an individual tool, such as Walters Art Gallery Ms. W 543, for example.[105]

Although for this study I have decided not to analyze the tooling and decoration of these books and am concentrating on their structure, I would be neglecting an important aspect of these codices if I did not at least briefly point out a few examples of the types of decoration found on them. The designs were made up of a

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[103]Armenians were deported from Julfa and other towns by Shah Abbas I for political regions in the early 1600's, and were brought to his capital, Isfahan, where they formed the town of New Julfa which was founded across the river from the capital. For further information on this community, see: Vartan Gregorian, "Minorities of Isfahan: The Armenian Community of Isfahan 1587-1722," Journal of the Society for Iranian Studies 7, Part 2 (1974): 652-680; John Carswell, New Julfa-The Armenian Churches and Other Buildings (Oxford, 1968).

[104]San Lazzaro Ms. 1594. Although the decoration of the boards is highly unusual, the manuscript itself is bound in a traditional Armenian manner, and there is no evidence of rebinding.

[105]A Gospel copied in AD 1455 in Xizan and restored in AD 1617.

combination of fillets, rolls, and individual tools. The individual tools can range from small circles or ovals to interlace motifs to small rosettes to a chenille.[106] The various tools, rolls, and fillets can be combined into geometric designs, or can be shaped into interlacings (also called "ropework" or "guilloche") or crosses, for example. See Figure 14 for an example of the chenille tool formed into a guilloche stepped cross.

Crosses are not uncommon on these predominantly religious texts. A blind-tooled stepped cross (a cross with arms usually consisting of interlacings and placed on a stepped mound--also called a Calvary cross[107]) was seen on the upper board of 36 bindings in this sample, as in Figure 14. This motif is found in other media in Armenian art, such as in khatchkars (xač'k'ar--stone cross) and in manuscript illuminations. For example, an early xač'k'ar dated AD 964 in Tekor is carved with a stepped base, as are quite a number of later crosses.[108] A number of manuscript illuminations observed in this study had full page illustrations of stepped crosses (which were not Crucifixion scenes). These so-called triumphal crosses

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[106]Petersen, 52--see "chenille" in diagram.

[107]Webster's Third New International Dictionary, 1981 ed., s.v. "Calvary cross."

[108]Levon Azarian and Armen Manoukian, Khatchkar Documents of Armenian Architecture Vol. 2, (Milan: Edizioni Ares, 1969), 18, 21, 27, 28, 33, and 35.

were placed on a stepped mound and usually had four trumpeting angels at the angles formed by the intersecting arms of the cross.[109] A manuscript from the Matenadaran is illuminated with a stepped cross made of interlacing, strongly resembling the tooled crosses which decorate so many of these bindings.[110] There are also some Crucifixion scenes from Armenian manuscript illuminations where the cross is located on a similar mound or hill with a skull at its base.[111] The skull is traditionally considered to be the skull of Adam, since Christ was said to have been crucified at Adam's burial site at Golgotha, "the place of the skull." This also nicely links Christ's Crucifixion

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[109]For example, see the following Gospels located in the Pierpont Morgan Library: M. 749, f. 9v (copied in Van in AD 1461); M. 624, f. 17v (copied in the village of Surs in Mok in AD 1588); and M. 623, f. 15v (copied in New Julfa, Iran, in AD 1658-1659). For published examples, see: Sirarpie Der Nersessian and Arpag Mekhitarian, Armenian Miniatures from Isfahan (Brussels?: Les Éditeurs d'Art Associés and the Armenian Catholicosate of Cilicia, 1986), Fig. 85 on p. 137, (a Gospel illustrated in the 15th century); and Vrej Nersessian, Armenian Illuminated Gospel-Books (London: The British Library, 1987), plate XVII (British Library Ms. Or. 5449, Four Gospels written in 1683).

[110]Matenadaran Ms. 10359, a Gospel copied in AD 1201 at Awag vank' (monastery) near the town of Erznkay, although some of the illuminations were executed in AD 1250 by Hovhannes, who also bound the manuscript. See: Emma Korkhmazian, Irina Drampian, and Gravard Hakopian, Armenian Miniatures of the 13th and 14th Centuries from the Matenadaran Collection, Yerevan (Leningrad: Aurora Art Publishers, 1984), plate 3.

[111]Sirarpie Der Nersessian, Armenian Art (Paris: Arts & Metiers Graphiques, 1978), 142.

to the original sin of Adam--the Crucifixion brought about the possibility of man's redemption from Adam's original sin which mankind inherited.[112] The stepped crosses decorating these bindings may be stylized versions of the cross on the hill at Golgotha.

A common geometric design often encountered on bindings consists of intersecting squares or triangles enclosed in a circle, or intersecting arcs contained in a square or a circle, and is often described as a "rosace." (see Figure 16). Fourteen bindings in this sample were decorated with these designs; it is interesting to note that most of them were not Gospels,[113] but texts such as the works of Nersēs Šnorhali,[114] Hymnals,[115] Collections of Canticles,[116] or other writings.[117]

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[112]James Hall, Dictionary of Subjects and Symbols in Art (New York: Harper and Row, 1974), 81.

[113]The Gospels which were decorated with a "rosace" were: Library of Congress Arm. Ms. 4 (copied in Jerusalem in AD 1321); Getty Museum Ludwig Collection Ms. II 6 (text copied in AD 1386 probably in the region of Van, but rebound in AD 1542 in the village of Noršen); British Library Or. 2707 (copied in AD 1542 in Xlat' in the village of Solac); and San Lazzaro Ms. Kurdian 25 (a binding which has been detached from its text, which was probably written in the 10th-11th century).

[114]Union Theological Seminary Arm. Ms. 4 (a 15th-16th century text), and Philadelphia Free Library Ms. 123 (copied in AD 1528 in the canton of Hamašēn).

[115]Freer Gallery of Art FGA 37.19 (copied in AD 1651-1652 in Siunik), and British Library Or. 5088 (copied in Varak Vank' in Van in AD 1507).

[116]Columbia University Rare Books and Manuscripts Ms. X/892.9/Ar5/Q (text copied in 1511 in Berkri but rebound

Other geometric designs may be used on both the front and back boards, such as a central rectangular interlace with interlace borders on the edges of the boards.[118] Often similar rectangular interlace designs are found on the back board of a binding that has a stepped cross on the front.[119] See Figure 15. Some bindings are blind-tooled with a variety of different tools, such as Hazarian Ms. 18, where the central design is composed of four lozenge-shaped fleuron stamps. This stamp is also used singly throughout the rest of the cover, along with a number of other stamps.[120]

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in AD 1629), and Yale University's Beinecke Library Ms. 445 (copied in the monastery of St. Yakob in Jerusalem in AD 1415).

[117]These other texts were: Library of Congress Arm. Ms. 3, the Story of Adam and Eve (copied in AD 1653 in Aleppo); Philadelphia Free Library Ms. 121, an Antiphonary (Manrusmunk') begun in Cilicia and completed in Jerusalem in AD 1314; Casanatense Ms. 2027, a commentary on Isaiah (Esayu Mekničʿ) copied in AD 1603 in Urha; and San Lazzaro Ms. 1007, a Bible written in Taron in AD 1332 and rebound in AD 1577.

[118]Such as New York Public Library Spencer Collection Arm. Ms. 2, a Hymnal possibly copied in the 14th century in Cilicia, but rebound later.

[119]For example: Freer Gallery of Art Ms. FGA 50.3, a 12th century Gospels (the text and the binding are no longer attached and are separate); San Lazzaro Ms. 641, a Gospel copied in AD 1256 in Cilicia but rebound later (see Figure 15); and Walters Art Gallery Ms. W 544, Gospels copied in AD 1666, probably in Tokat.

[120]Hazarian Ms. 18 is a Gospel copied in New Julfa (Isfahan) in AD 1628.

Many manuscripts from New Julfa (Isfahan) were found to have a distinctive style of binding decoration. Most of the bindings produced there in the in the 17th and 18th centuries were blind-tooled with characteristic designs and tools, which were probably either European-bought or at least European-inspired. In addition, a number of these were tooled with Armenian inscriptions in the borders, usually giving the date of the binding and the name of the patron. See Figures 17 and 18 for an example of such an inscribed binding. A close study of the tools used in these bindings in combination with the dated inscriptions will yield much useful information for the study of Armenian bookbinding. For example, San Lazzaro Ms. 1351 (Figure 17), bound in AD 1695 according to its binding inscription (and also written in AD 1695) was compared to Philadelphia Free Library Ms. 115, a Gospel written in AD 1504 at the monastery of Sanahin but clearly rebound later. Close examination of the two indicated that exactly the same tools had been used (although the disposition of the tools was not exactly the same). The Philadelphia binding, however, did not include any inscription on its boards. In addition, the exact same blue and white striped cloth doublure was used to line the inside boards of both manuscripts, and they were both made with the same traditional Armenian bookbinding structure. (See Figures 11, 12, and 17). We can be fairly sure,

therefore, that Philadelphia Ms. 115 was also bound in the same workshop in New Julfa (perhaps even by the same craftsman) at the end of the 17th century.[121]

Although I have not thoroughly analyzed the tools used or the styles of decoration on these bindings, such an analysis will eventually be necessary for a complete study of these manuscripts. Identification of tools, styles, and decorative patterns may help in identifying specific workshops or in dating manuscripts (as in the Isfahan examples given above), and in identifying regional differences in decoration. Comparative studies with the tools and styles used in other binding traditions will continue to inform us of interactions between different cultures.

Spine Ruling

Another interesting feature related to tooling can be found on the spines of these manuscripts. The leather spines of 79 manuscripts (or 47%) were ruled with a series

[121]For another comparison between two New Julfa bindings (both with dated inscriptions on the boards), see S. Merian, "From Venice to Isfahan and Back...", where San Lazzaro Ms. 1571 (bound in AD 1710) and San Lazzaro Ms. 1527 (bound in AD 1700) were found to be blind-tooled with the same tools. See also: Frédéric Macler, "Notes sur quelques manuscrits arméniens avec reliure à inscription" Banasēr 7 (1905): 14-20; and Dickran Kouymjian, "Inscribed Armenian Manuscript Bindings in the Collection of the Mekhitarist Brotherhood of Venice," in Atti-Quinto Simposio Internazionale de Arte Armena, pp. 413-423. (Venice: San Lazzaro Press, 1992).

of parallel vertical lines (see Figure 19). A few also included some horizontal lines, zig-zag designs in between the vertical rulings, or other decorative features. These lines may have been made with a fillet and a straight edge, and were probably decorative in function, although it is possible that they may have been done to make the book easier to open. The spine leather of these books has been glued or pasted onto the cloth spine lining, and the books are therefore called "tight back". Perhaps the vertical spine rulings on these tight back books performed the same function as when readers today buy a book (especially a paperback) and proceed to "crack" the spine when reading it so that it will stay open. Whether these ruled lines had any purpose beside a decorative one, they eventually did damage many of the bindings--the lines were indented into the leather, thereby making it thinner and weaker in those vertical areas, and after frequent use the leather began cracking along those lines. The spine leather of most of the books examined in this study were severely torn along the ruled lines.[122]

Clasps

Another important feature found on the majority of the manuscripts is some type of fastening system to keep

[122]This did, however, often enable me to see the cloth spine lining.

the books closed. The use of clasps or ties to keep books tightly shut is a very old tradition--ties have been found in Coptic manuscripts dating from the 3rd to 4th centuries AD.[123] In this sample, 133 bindings or almost 80% had either extant or fragmentary clasps, or evidence of them.[124] Clasps are especially important for parchment books, since parchment, being made of animal skin, is very sensitive to changes in temperature and humidity and can therefore easily curl and warp. Maintaining the book tightly closed between its wooden covers helps keep the pages flat and prevents them from wrinkling, in addition to keeping out dust. However, clasps were used for books written on paper also.

In Armenian bindings, the fastening system usually consisted of two or three wooden or metal pegs located on the front board 1 to 3 centimeters away from the fore edge, depending on the size of the book. At corresponding areas on the back boards, a leather strap or thong was attached, which would reach over the fore edge of the book and hook onto the peg on the front board. The fastening system was usually located only at the fore edge, and

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[123]Jean Doresse, "Les reliures des manuscrits gnostiques coptes découverts à Khénoboskion," Revue d'Égyptologie XIII (1961): 27-49 passim.

[124]Holes in the boards at the place where such clasps were normally located.

would be evenly spaced from head to tail.[125] Sixty-eight of the books no longer had extant clasps, leaving only the holes drilled through the leather and wood of the front and back boards as evidence. See Figures 5, 11, 12, 14, 15, 17, and 18. However, remnants of leather thongs were often found plugging up the holes in the back board. Since each thong was threaded from the inside of the back board through a drilled hole to the outside, the part of the leather on the outside often broke. Fragments could sometimes be found on the inside, however, since the thong had been glued or pasted to the inside back board. Nonetheless, a few intact straps were seen, as in Figure 10, for example.[126] The fastening system of one binding consisted of two embroidered cloth straps with a metal fitting on the end for attachment to the metal pin on the upper board,[127] and another one consisted of three twisted cotton ties on both the upper and lower boards, which would have simply been tied together at the fore edge.[128]

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[125]Only one binding in this sample was found to have an supplemental brass clasp located at the head, in addition to the three which might be expected at the fore edge. See Getty Museum Ludwig Collection II 6, a Gospel rebound in AD 1542 in Noršen village.

[126]Two of the three leather thongs remain on Walters Art Gallery W 543. This AD 1455 Gospel from Xizan was restored in AD 1617.

[127]Freer Gallery FGA 37.19, a Hymnal copied in AD 1651-1652 in Siunik.

[128]Philadelphia Free Library Ms. 116, a Gospel written in Armenian on the left column and in Turkish using

Metal Ornamentation

Some manuscripts have had decorative metal pieces, such as crosses, full-cover silver plaques, corner pieces, or numerous round metal studs nailed onto their covers. Most of these seem to have been put on the book at a later time, that is, after it was bound, covered in leather, and tooled. They usually have a tooled leather cover beneath them. These metal ornaments are not structurally important to the books, but are worthy of study not only for their artistic interest but because they also imply that great value and importance were placed on these sacred manuscripts by the people in whose care they were entrusted, and by the society as a whole.

Some of the silver plaques were inscribed in Armenian with information such as the date, name of the donor and/or silversmith, or perhaps with a religious inscription. For example, the inscription on the back plaque of the Gospel belonging to the Metropolitan Museum of Art (Islamic Collection Acc. No. 16.99) tells us that it was made in Kisaria (Kayseri or Caesarea, Cappadocia) in AD 1691 by Astuacatur Šahamir, while the manuscript

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Armenian letters on the right column. It may have been written in AD 1655 in Constantinople, according to a later note glued to the inside front board which mentions the two brothers who translated the Gospels into Turkish there in 1655.

itself dates from approximately the 13th century. A number of these silver plaques are stylistically similar and can therefore be dated to 17th century Kayseri, where an important school of silverworkers developed at that time.[129]

The manuscripts with full-cover plaques from Kayseri seen in this study were all silver, although some were gilt.[130] Silver plates were nailed on both their front and back covers, some with enamelled backgrounds and a few even included precious or semiprecious stones as ornamentation. Some, for example Walters Art Gallery Ms. W 542, have no enamelling or jewels on the silver. The full cover silver plates usually depict various religious scenes, such as: the Adoration of the Magi and the Resurrection (New York Public Library Spencer Collection Arm. Ms. 6); the Adoration of the Magi and the Ascension

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[129]These silver covers have not yet been thoroughly studied as a group, although I have begun this research project. In the meantime, see: H. Kurdian, "An Armenian Silver Binding Dated 1653," Princeton Library Chronicle VII, no. 3 (April 1946): 118-119; Y. K'iwrtean (= H. Kurdian), "Kesarioy oskerč'akan dprc'in arcat' kazmerě," [Silver Bindings from the Goldsmithing School of Kayseri] Hayagitakan Taregirk' (Hask) 1948: 51-61; and Archbishop Garegin Yovwep'ean, "Mi ēj hay Aruesti ew mšakout'i Batmut'iwnic'" [A Page from the History of Armenian Art and Culture], Tat'ew-Taregirk' Grakanut'ean ew Aruesti (Aleppo) 6 (1930): 194-248.

[130]New York Public Library Spencer Collection Armenian Mss. 3 and 6; Pierpont Morgan Library M. 437; Walters Art Gallery Mss. 540 and 542; Metropolitan Museum of Art Islamic Dept. Acc. No. 16.99; and San Lazzaro Ms. 2061.

(Walters Art Gallery Ms. W 540); the Presentation in the Temple and the Ascension of Christ (Walters Art Gallery Ms. W 542); the Adoration of the Shepherds and the Resurrection (Metropolitan Museum Islamic Dept. 16.99); and an angel placing hot coals into the mouth of Isaiah, surrounded by portraits of 24 prophets (front), while the back cover depicts Christ preaching at the Temple of Jerusalem and bordered by portraits of the Twelve Apostles (San Lazzaro Ms. 2061). A detailed study of the iconography and style of these religious scenes is yet another interesting research project which should be carried out in the future.

Although the above listed silver covers are very similar stylistically and some even have the same narrative scenes or decorative borders,[131] they were not made with any kind of mold or die. An examination under magnification of the Metropolitan Museum covers indicated

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[131]For example, the silver plaques on the manuscript at the Metropolitan Museum of Art and the plaques on Walters Art Gallery Ms. W 540 have the same border motifs of a vine scroll trimmed with precious and semi-precious stones, the same linear edging and colored enamelled backgrounds, and have central religious scenes with stylistically similar figures and facial expressions. The Metropolitan Museum plaque is inscribed by the silversmith Astuacatur Šahamir, who completed it in 1691 in Kayseri. The plaques on the Walters manuscript are not inscribed, although they have been tentatively dated to the 17th century by Sirarpie Der Nersessian, Armenian Manuscripts in the Walters Art Gallery (Baltimore: Walters Art Gallery, 1973), 50-51. It is probable that the two sets of covers were made in the same workshop, perhaps even by the same person.

that the plaques were done in shallow repoussé (meaning that the figures or designs were made by pushing the silver plate with tools from the back of the plate), with much working on the front (chasing, engraving, and punchwork).[132] The enamelling found on most of the covers was often chipped.[133] This is not unexpected, since enamelling does not usually adhere well to silver, and lasts longer on gold or copper.[134] The Metropolitan Museum covers were also gilt, which under magnification looked spongy, indicating that it was gilt using what is called a mercury-gilding technique.[135] One could probably study the different punches used in these silver plaques and distinguish if they were made by the exact same punch.[136]

Further study of the techniques used in making these plaques, in addition to a stylistic and iconographical

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[132]I wish to thank Richard Stone, Objects Conservator at the Metropolitan Museum of Art, who on January 31, 1991 spent time with me examining manuscript Acc. No. 16.99 from their collection, explaining the different techniques used.

[133]All the Kayseri covers listed above were also enamelled, except Walters Art Gallery Ms. W 542.

[134]Richard Stone, Metropolitan Museum of Art, Oral Communication, January 31, 1991.

[135]According to Mr. Stone, in mercury gilding, gold is dissolved in mercury, resulting in a sludgy mixture. This is applied to the desired area, and then the object is heated to drive off the mercury. This type of gilding usually appears spongy under magnification.

[136]Richard Stone, Metropolitan Museum of Art, Oral Communication, January 31, 1991.

analysis coupled with the information presented by the covers with dated inscriptions, would probably enable us to identify and date specific workshops of the silversmiths or goldsmiths who produced them, and would also reveal the silversmithing techniques used in Kayseri in the 17th century. The many Kayseri silver covers found in collections which I have not yet had the opportunity to consult should also be examined, especially those which were made with dated inscriptions.

One set of silver covers (probably not from Kayseri) is of particular interest because the silversmith paid specific attention to the structure of the book itself in the making of the metal covers. In addition to the front and back silver plaques and chain-link spine, Pierpont Morgan Library Ms. M 621 (a Gospel probably copied in the 17th century) had a matching hinged gilt-silver flap made to cover the leather fore-edge flap. Furthermore, these plaques were made with raised edges at the spine side at the head and tail in order to ensure that the raised endbands of the book were covered.[137] The style of the

[137]Note that the flap of this manuscript has left us some interesting evidence that further indicate that the silver covers were probably made at a later date than the book. The leather fore-edge flap had been completely cut off (or had torn off) and were then covered with the silver flap. The turn-ins of the leather fore-edge flap can be seen when opening the silver flap, and they are on the wrong side, indicating that it was removed and placed inside the silver flap upside down. Additionally, the silver flap was made curved, to fit the curvature of the

figures on the covers do not seem to be related to the Kayseri silverwork previously mentioned.[138]

Some of the books had a silver spine piece fully covering the spine attached to the front and back plaques by hinges,[139] others had no metal on the spine, thereby enabling the viewer to see the spine leather,[140] and still other manuscripts had a series of silver chains over the spine,[141] which also allowed the spine to be viewed. One manuscript with silver covers from Kayseri was also equipped with seven silver straps across the green velvet-covered spine.[142]

Some manuscripts did not have full silver plaques but had smaller metal pieces nailed onto one or both the

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leather flap. This curvature probably did not occur until some time after the book was made.

[138]The work was not done in repoussé, as the figures appear to be soldered onto the simple silver plaques. The front cover depicts a crucified Christ, but no cross, and two female(?) figures on either side of him, while the back cover shows Christ in the center holding a globe, with the symbols of the four Evangelists in each corner.

[139]For example, Morgan Library Ms. M 437, whose covers are probably from Kayseri.

[140]New York Public Library, Spencer Collection Armenian Ms. 3 and 6. The silver covers of both are probably from Kayseri.

[141]Morgan Library Ms. M 621, and Walters Art Gallery Ms. W 540. Morgan Ms. M 621 also had two chains used as clasps on the fore edge which were similar to the spine chain.

[142]San Lazzaro Ms. 2061.

leather-covered boards. For example, Pierpont Morgan Library Ms. M 624 has a metal Crucifix dated 1897 nailed onto the front cover; Walters Art Gallery Ms. W 538 has four quatrefoil crosses and four corner pieces nailed on the front; Freer Gallery of Art Ms. 36.15 includes a silver border piece outlining each cover, with a central Crucifixion scene on the front, a centrally placed Resurrection scene on the back, and four angels in each corner inside the border; Pierpont Morgan Library Ms. M623 has a large quatrefoil silver cross on each cover, each with a jewel set in its center.

The 14th-15th century Gospel rebound in AD 1649 in the village of Hapusi in Anatolia and now located in the collection of the American Bible Society, New York (Acc. No. 1816) is decorated with a large number of silver quatrefoil crosses (some set with semi-precious stones), metal studs, and other smaller oval-shaped metal pieces nailed onto the front and back boards, almost completely hiding the leather. A note written in English in 1864 and pasted onto the second leaf provides us with an interesting interpretation about these metal pieces: "The silver crosses and other ornaments on the cover are the gifts of mothers whose children have died unbaptized and

are supposed to suffice as Baptism to secure the salvation of the infants."[143]

Another form of decoration found on some of these manuscripts was the embellishment of the covers by nailing a number of rounded metal studs on the leather-covered wooden boards.[144] A total of sixteen manuscripts show this form of decoration--extant studs were seen on five bindings,[145] and eleven more had evidence of them (holes in the boards and round shadows around the holes, which developed when the leather not covered by the metal discolored).[146] The studs were usually arranged in various designs, often in the form of a stepped cross. The upper board of one unusual cover (Freer Gallery of Art Ms. FGA 44.17) was decorated with metal studs forming a border, with more studs in the center of the front board forming what appears to be a crude stepped cross. In the center

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[143]The note also states that the book was presented to the American Bible Society by C. H. Wheeler, a missionary of the ACCFM [sic] in Kharpert, Turkey in March 1864.

[144]No analysis has been done to determine their composition, although it appears that some may be silver and others could be brass.

[145]Freer Gallery of Art FGA 44.17; American Bible Society Acc. No. 1816; Getty Museum Ludwig Coll. II 6; Bibliothèque Nationale Ms. Arm. 17-reserve; and San Lazzaro Ms. Kurdian #25.

[146]Hazarian Coll. Ms. 5; New York Public Library Spencer Coll. Arm. Ms. 1; Library of Congress Arm. Ms. 4; Getty Museum Ludwig Coll. II 7; Vatican Library Borg. Arm. 71; British Library Or. 2707 and Or. 2668; San Lazzaro Mss. 1113, 69, 1012, and 1038.

of this cross is a small square glass or crystal box with a cross-shaped groove inside. It is believed that this may once have held a reliquary.[147] These studs could have been added on at a much later date than the date at which the text itself was copied, or even later than the date when the book was bound. There is no way of determining exactly when this decorative embellishment may have occurred, although most of these sixteen manuscripts were repaired or rebound at some time. It is interesting to note that all sixteen manuscripts decorated with metal studs were Gospels. Perhaps this decoration was reserved only for the embellishment of Gospel books, or had some other symbolic significance.[148] The studs may also have aided to protect the leather from being unnecessarily rubbed and damaged if laid down flat.

A number of other bindings no longer had extant metal pieces on their covers but only a large number of small holes in their boards, evidence that such metal decorative pieces were once attached, but are now missing.[149] Sometimes the outline of a cross or metal plate that had

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[147]Sirarpie Der Nersessian, Armenian Manuscripts in the Freer Gallery of Art (Washington, D.C.: Smithsonian Institution, 1963), 18.

[148]See the section on Syrian bindings in Chapter 4 for further discussion on similar studs found on the covers of Syriac manuscripts.

[149]One example is Library of Congress Armenian Ms. 4.

once been on the cover was visible, due to the discoloration of the exposed leather.[150]

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We have seen that the majority of Armenian bindings were made of blind-tooled leather-covered wooden boards with a horizontal grain and no squares. They were drilled with holes near the spine in order to be attached to the text block, and also had holes drilled at the head and tail in order to tie-down the distinctive raised endbands. Each quire making up the text block was notched at each sewing station, although the type of notching could vary. The board attachment and sewing was probably combined, by using a method of looping a cord through the board holes and sewing the signatures upon these cords. The spine was lined with a piece of cloth. The edges of the text block were often colored red leaving a distinctive horse-shoe shape uncolored at the head and tail near the raised endbands. The fore edge was frequently covered with a rectangular leather flap, and the spine leather was commonly ruled with parallel vertical lines. Let us next examine the bookbinding techniques of neighboring cultures in order to compare them to the Armenian methods, discover what are the similarities and differences, and try to

[150]One example is New York Public Library, Spencer Collection Armenian Ms. 1.

determine what the historical explanations for these similarities or differences might be.

Chapter 3

A Comparison Between Greek/Byzantine and Armenian Bookbinding

Introduction

A cursory inspection of both Greek and Armenian bookbindings reveals many external similarities. These similarities have even given rise to some Armenian bindings being described as "à la grecque,"[1] the French name given especially to the Greek-like style of binding used in approximately the 15th-16th centuries for binding Western European books printed or copied in Greek.[2] A discussion focusing on Armenian and Greek bookbinding traditions is therefore a logical starting point for a

[1]See, for example, the exhibition catalogue description for the AD 1641 printed volume of the Lives of the Fathers (Haranc' Vark'), catalogue entry no. 99, in: Paul Quarrie, Treasures of Eton College Library: 550 Years of Collecting (New York, NY: The Pierpont Morgan Library, 1990), 77. Examination of the book showed that it is actually bound in the traditional Armenian style.

[2]It was considered fashionable to have one's Greek language books bound in the Greek style, meaning with raised endbands, a smooth spine (i.e., no raised bands), grooved edges; the external aspect was Greek, but the actual structure of the book may not have necessarily been Greek. Piccarda Quilici, "Legature Greche, 'Alla Greca', per la Grecia," Accademie e Biblioteche d'Italia 52, no. 2 (1984): 106-108. For some examples, see: Anthony Hobson, Humanists and Bookbinders (New York: Cambridge University Press, 1989), 62, 65-66; and Anthony Hobson and Paul Culot, Italian and French 16th-Century Bookbindings (Stavelot, Belgium: Bibliotheca Wittockiana, 1990), 38-39.

comparative study. There is a relatively large amount of secondary material published on the topic of Greek/Byzantine bindings, some of which has appeared very recently.[3] This secondary material forms the major source used for this chapter, in addition to information obtained from workshops and lectures given by researchers on the topic,[4] my own observations of models and original bindings displayed in the exhibition held in Venice and Parma in 1989--"Legature Bizantine Vaticane e Marciane," and the examination of one Greek binding in the Vatican Library.[5]

The similarities between the two bookmaking traditions are many. The books are both made with

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[3]Berthe van Regemorter, "La reliure des manuscrits grecs," Scriptorium VIII (1954): 3-23. Idem, "La reliure byzantine," Revue Belge d'Archéologie et d'Histoire de l'Art XXXVI (1967): 99-162. Carlo Federici and Kostantinos Houlis, Legature Bizantine Vaticane (Rome: Fratelli Palombi Editori, 1988) is a study of 112 Greek bindings from the Vatican Library, whose texts date from c. 9th century to the 17th. See also: Assunta Di Febo, Kostantinos Houlis, Gabriele Mazzucco, and Sever. J. Voicu, Legature Bizantine Vaticane e Marciane, Exhibition catalogue, Sept. 9-Oct. 30, 1989 at the Biblioteca Nazionale Marciana (Venice, 1989).

[4]Guy Petherbridge, Workshop--"Traditional Greek Bindings 14th-18th Centuries." Columbia University, New York, N.Y.: February 22, 1986; Guy Petherbridge, "Cross-cultural Relationships in Christian-Oriental and Islamic Bookbinding Traditions," paper presented at the International Conference: La Legatura dei Libri Antichi tra Conoscenza, Valorizzazione e Tutela. Parma, Italy: November 16-18, 1989 (in press?).

[5]Vatican Library Barb. Gr. 85, 16th century.

leather-covered wooden boards, are often blind-tooled, and do not have squares. The endbands are raised, the spine is smooth, and V-notches are used at the sewing stations. A cloth spine lining (usually a coarse cotton or linen tabby weave) is used to cover the spine before the leather is glued or pasted to the boards. A fastening system, usually some type of clasp reaching from back to front, is often used. Additionally, the pages of the quires are often ruled and pricked, which is common to many traditions,[6] and the quires are numbered using a system similar to the Armenian "numeric" system described in Chapter 2.[7] The "alphabetic" quire numbering system seen in a few 12th-13th century Armenian manuscripts[8] was apparently very rarely used in the Greek tradition; when found, it occurs in manuscripts copied after the

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[6]The different types of rulings of Greek manuscripts have been analyzed in: Julien Leroy, Les Types de Reglure des Manuscrits Grecs (Paris: Editions du CNRS, 1976). Such a study has not yet been undertaken for Armenian manuscripts.

[7]Both Greek and Armenian use the first ten letters of their alphabet as numbers 1 through 10; the 11th letter corresponds to 20, the 12th corresponds to 30, etc., then the 19th through 27th letters correspond to numbers 100, 200 and so on up to 900, etc. See Herbert Smyth, Greek Grammar, (Cambridge, Mass.: Harvard University Press, 1984 reprint), 102-104A. This numbering system is also used in the Syriac and Hebrew traditions.

[8]See Chapter 2.

Renaissance and has been attributed to occidental influence.[9]

However, if we probe a little deeper into the structure of the books of these two traditions and look closer at some of the technical details of their making, we will discover a number of differences in addition to the similarities just listed.

Sewing Stations/Notching

Greek manuscripts were generally made from either parchment or paper, although some early codices made of papyrus have been found.[10] The use of papyrus diminished as parchment and paper became more available, although the latest Greek hagiographic document written on papyrus is dated to the 12th century.[11] The parchment or paper leaves may have been prepared in a variety of ways. Parchment was apparently rubbed with a pumice stone to smooth the

[9]Jean Irigoin, "Pour une étude des centres de copie byzantins," Scriptorium XII (1958): 222. Prof. Robert Allison of Bates College (Lewiston, Maine), who is in process of cataloguing over 400 manuscripts of the Philotheou Monastery on Mt. Athos dating from the 10th to the 20th centuries, has indicated to me in an oral communication in Oct. 1992 that he has only seen one or two manuscripts in this corpus which used the alphabetic system of quire numbering.

[10]Papyrus was especially used for scrolls, before the codex form of the book became more common after the 2nd century AD. Robert Devreesse, Introduction à l'étude des manuscrits grecs (Paris: Imprimerie Nationale, 1954), 9.

[11]Ibid., 10. This document is from Sicily.

surface before writing, at least in ancient times.[12] In Byzantium, parchment leaves were often coated with egg to make the surface appear shinier, although it was apparently known as early as the 13th century that this treatment could later cause the ink or pigment to flake off the parchment.[13] Paper was used as early as the 11th century in Byzantium, and probably as early as the 8th-9th centuries.[14] To my knowledge, there is no published information as of yet as to whether paper was polished before use.

The leaves would next have been pricked and ruled,[15] folded into signatures, and then the binders would have

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[12]Devreesse, 13. Catullus Poems, xxii, 7 (Loeb Classical Library, pp. 26-27). Catullus (a Roman poet of the 1st c. BC) speaks of parchment which was smoothed with pumice ("pumice omnia aequata").

[13]Jeffrey Abt and Margaret A. Fusco, "A Byzantine Scholar's Letter on the Preparation of Manuscript Vellum," Journal of the American Institute for Conservation 28, no. 2 (Fall 1989): 61-66. This article is a translation of a letter written at the end of the 13th century by the scholar Planudes to his colleague Melchisedek, who has agreed to obtain parchment for him. Planudes warns his friend not to coat the parchment with egg, since contact with water will cause the coating to cockle and therefore the ink to flake off.

[14]Devreesse, 16-17.

[15]Leroy, Les Types de Reglure..., does not discuss what instruments may have been used to rule and prick the leaves. However, J. P. Gumbert, "Ruling by Rake and Board," in The Role of the Book in Medieval Culture, ed. Peter Ganz, Vol. 1 [Bibliologia 3 & 4] (Turnhout: Brepols, 1986), 51, note 22, states that he has seen Greek manuscripts which were ruled by the use of a ruling board.

prepared the quires for sewing by cutting a V-notch at each sewing station in the fold of the quires in order to facilitate the sewing procedure. These notches, called grecquage and usually ranging in number from 3 up to 7, were cut using either scissors or some kind of blade or knife.[16] It is possible, however, that a saw may have been used after the 16th century, as was done with Western manuscripts.[17] The V-notches were generally cut at an angle ranging from 30 to approximately 45 degrees.[18] As in Armenian bindings, the notches aided the binder while sewing since they formed previously cut holes at each sewing station. They also recessed the sewing, thereby giving the book a smooth spine. It seems that Greek binders did not develop any variations on the V-notch, such as W- or half-circle notches, which have been seen on some Armenian bindings.[19]

Sewing

Although both Greek and Armenian manuscripts usually have smooth spines since the sewing has been recessed into

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[16]van Regemorter, "La reliure des manuscrits grecs," 5-6; Federici, 23.

[17]Federici, 23.

[18]Ibid.

[19]None of the published material mentions any other kind of notching besides V-notches in Greek manuscripts.

the notches, the sewing techniques themselves differ in a very significant way. As stated in Chapter 2, Armenian bookbinders used a method of supported sewing. Greek binders, however, utilized an unsupported sewing structure, with link stitches in which each quire is connected to the one below it by use of the sewing thread only. No support such as a cord, leather thong, or textile tape is utilized for the stitching to go around. The sewing stitch pattern resembles a herringbone or chevron.[20] In his article on Greek sewing structures, Guy Petherbridge has described in meticulous detail the different variations which can be found in the sewing of these bindings, including the diverse types of link stitch sewing. These extensive details will not be repeated here; however, one unusual category should be mentioned. The herringbone stitches can all point in the same directions, thus: >>>>>>> (which Petherbridge calls a "uniaxial stitch disposition"). However, another type has been noted in Greek bindings, which he calls a "biaxial

[20]Federici, 24; van Regemorter, "La reliure des manuscrits grecs," 6; and an unpublished article by Guy Petherbridge,"Sewing Structures and Materials: A Study in the Examination and Documentation of Byzantine and Post-Byzantine Bookbinding," in Akten: II Internationales Kolloquium Griechische Paläographie und Kodikologie (Berlin und Wolfenbüttel), 17 Oktober 1983, edited by D. Harlfinger and G. Prato (Biblioteca di Scrittura e Civiltà), forthcoming. I would like to thank G. Petherbridge for kindly providing me with a copy of his article before its publication.

stitch disposition," in which the chevrons point in opposite directions on the spine of the book, thus: >>>><<<< . This occurs because the text block was sewn in two separate parts, and then the two sewn pieces were joined in the middle.[21]

Boards and Board Attachment

Both traditions use wooden boards cut the same size as the text block (i.e., there are no squares). The most commonly used wood found in Greek bindings are poplar, conifer woods (such as pine), and beech.[22] However, the form and method of attachment of these boards to the text block are quite dissimilar. Greek boards have several characteristics which differ from Armenian boards. In the Federici/Houlis study of 112 Greek manuscripts in the Vatican Library, the thickness of the boards ranged from approximately 5.5 to 24 mm.[23], averaging approximately eleven mm. with leather (therefore about 8-10 mm. without

[21]Petherbridge, "Sewing Structures and Materials..." This information has been confirmed by Mme Dominique Grosdidier de Matons, a researcher on Greek bookbindings (Paris) during a conversation in 1990. She further informed me that almost all the Greek bindings which she has examined over the years were sewn in this manner.

[22]Federici, 27.

[23]Ibid., 71-72. Note that the measurements were made to include the thickness of the leather covering the boards.

including the leather in the measurement).[24] Armenian boards are usually only 2 to 5 mm. thick. The fact that the boards were cut this thick has allowed for the development of certain other features (or conversely, perhaps the desire to incorporate those other features influenced the thickness of the board used). For example, there is no special need to align the wood grain horizontally as in Armenian bindings, and the majority of Greek boards have the wood grain placed vertically, parallel to the spine.[25] Thick boards also permit different kinds of board attachment methods to be used. At least fourteen different methods of preparing the boards before connecting the text block to them are described in the Vatican study,[26] which may use cords

[24]Petherbridge has corroborated this measurement, stating that the average thickness is 8 to 11 mm. Petherbridge, Workshop.

[25]According to the Federici/Houlis study, 89% of the Greek manuscripts they examined had the wood grain placed vertically, 8% had a horizontal grain and 3% had one board with a horizontal grain and the other vertical. Federici, 27 and 79-80.

[26]Ibid., 28-32. Note that the board attachment type which they call number "16" (p. 31, fig. 21) appears to be the "Armenian" loop method of board attachment, and two Greek manuscripts out of the 112 examined are listed as being made in this manner; the first (Barb. Gr. 85) is probably a 15th c. text, and the second (Borg. Gr. 13) is most likely a 16th c. work. Neither has a secure provenance. While at the Vatican Library, I examined Barb. Gr. 85, "Ethica Aristotelis," and determined that it does indeed use the loop method, with double support cords instead of one folded one, and there was no evidence of rebinding. It is not clear what this indicates. Is it a rarely used Greek method? Might it indicate that an

attached to a variety of different holes, channels, or tunnels. The holes or channels may even be drilled diagonally, made possible by the use of thick boards. The text block was sewn together first, and then attached separately to the previously prepared boards in one of three possible ways.[27]

Another characteristic often found in Greek bindings is the addition of a groove gouged into the thick edges of the wooden boards, of which there are apparently at least five different types.[28] It has been postulated by some scholars that the origin of this edge groove may have developed from the same trait also found in Coptic bindings, although the groove found in Coptic boards occurred because the boards were traditionally made of a double thickness of papyrus covered with leather, forming a groove on the edges.[29] The grooves made in Greek

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Armenian binder was at work here? Might it simply be some type of hybrid? Or could it perhaps be a situation such as a Greek binder taught at an Armenian-based workshop? The endbands of Barb. Gr. 85 are not the typical Armenian type, and there is no fore-edge flap, no cloth doublure, no edge coloring, and the sewing threads observed in the center of the quires were double instead of single as is usually seen in Armenian manuscripts. Note also that the 6 mm. thick boards were cut with a horizontal wood grain, the traditional Armenian way of aligning the wood.

[27]These are described and illustrated in Federici, 25-26.

[28]Ibid., 28. See also B. van Regemorter, "La reliure des manuscrits grecs," 4-5.

[29]Douglas Cockerell, "The Development of Bookbinding Methods--Coptic Influence," The Library Fourth Series,

bindings had no function other than decorative, and they are not seen in Armenian bindings.

Spine and Spine Lining

The spines of both Armenian and Greek manuscripts are smooth (i.e., do not have raised bands), a result of the cords being recessed into the notches during sewing. As mentioned previously, both traditions also make use of a cloth spine lining, glued or pasted to the spine of the book after the text block has been sewn and the boards attached.[30] It covers the spine from head to tail and reaches over to cover approximately one-fourth to one-third of each board. The fabric is usually a coarse white or beige cotton or linen tabby weave. (See Figure 8 for an Armenian example). Leather eventually covered this cloth spine lining and the exposed boards. The spine lining is therefore often difficult to examine, and can be seen on the spine only if the spine leather is cracked, torn, or missing, although sometimes it can be observed through cracks between the quires in the text block. Other times

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XIII, no. 1 (June 1932): 12; and van Regemorter, "La reliure byzantine," 104. This trait has so far not been found on any Armenian manuscripts examined, which is logical since the majority of the boards are too thin to permit a groove to be gouged into the board edges.

[30]Federici, 33 states that a type of starch(?) paste ("sostanze amidacee") was used in Greek manuscripts for adhering the cloth to the spine. It is not clear what type of analysis was done to determine this, however.

it cannot actually be seen but can be discerned under the leather, since it may cause a raised area about one-quarter to one-third of the way in on the boards, corresponding to the edge of the cloth.

The spine lining had a number of functions. It provided a smooth surface upon which to position the leather, and would eliminate or at least diminish any unsightly ridges on the boards caused by the board attachment which might show beneath the leather.[31] It also protected the folds of the quires from any damage the leather may have caused by direct contact with the paper. Federici and Houlis mention another possible purpose for the spine lining in Byzantine bindings, stating that it would improve or strengthen the attachment between the boards and the text block, an attachment which may be somewhat weak due to the lack of sewing supports.[32]

Endbands

There are a number of similarities between Armenian and Greek endbands. The most striking trait is that in both traditions the endbands are raised a few millimeters above the spine and boards, usually between 5-10 mm. They were made by drilling a small number of holes into the

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[31]Van Regemorter, "La reliure byzantine," 124-125.

[32]Federici, 33.

boards near the spine, attaching a primary core (usually cord) to the boards by placing the cord across the spine and a few centimeters around the board and sewing it down to the boards by using the pre-drilled holes. The core was further attached by sewing into the center of each quire. The entire operation was done after the boards and text were attached to each other and after the cloth spine lining was adhered to the spine; therefore the sewing of the primary core at the spine through the center of each quire would pierce the cloth. (See Figure 8 for an Armenian example).

Since the boards of Greek manuscripts were usually thick, Greek binders were able to develop three different types of drilled holes for the endband tie-downs. In the first, the holes were drilled straight down through the boards, as in Armenian bookbindings. The second method (mentioned as a possibility in the Vatican study but not actually found in any of the manuscripts which they examined) would have had holes drilled into the board thickness at the head and tail, forming a tunnel which exits on the interior of the board. The third and most commonly used method is similar to the second one described above except that the exit holes are found on the exterior of the boards.[33]

[33]In the Vatican study, 38% of the 112 manuscripts surveyed used the "straight through" method (the first one

Although both traditions use a primary core, in all the Armenian bindings examined so far in which the core was evident, the single primary core was made of cord. Greek bindings, however, most commonly use a total of two primary cores, of which both may be cord, or one may be of cord, and the other may be leather.[34] The leather was usually similar to the leather used for covering the book, and the diameter of the two cores need not necessarily be the same.[35] Single primary cores are also found.[36] Armenian binders used one primary cord core and as many as three or four secondary cores (again of cord). The cords used for the secondary cores were usually thinner than the one used for the primary core.[37] Greek endbands do not always use secondary cores, but when they do, up to two may be used.[38]

Although both traditions made use of a primary core tied down into the boards, they were sewn down onto the boards in slightly different ways. The Armenian binders

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described), 0% used the second method, 54% made use of the third method, and 9% were undetermined. Ibid., 34 and 79.

[34]Ibid., 34-35; and B. van Regemorter, "La reliure byzantine," 126-128.

[35]Federici, 34.

[36]Ibid., 34-35.

[37]See Chapter 2, "Endbands" section.

[38]Les tranchefiles brodées-étude historique et technique (Paris: Bibliothèque Nationale, 1989), 52-61.

commonly used only one particular method, described in Chapter 2. The Greek/Byzantine binders seem to again have a greater variety of methods for the primary sewing. The majority of Greek endbands seem to be made with a primary sewing of two cores, either two cord cores or one cord and one leather core.[39] There are also two methods of one-core primary sewing; these are less common, however, than the two-core system.[40] In all three methods, the cord (or cords) are placed at the spine, reach onto the boards a few centimeters, and are first tied down into the boards by using the previously drilled holes and/or channels. They will be sewn and wrapped in different ways, depending on the method chosen, but the basic function is, as always, to form another structural attachment between the boards and the text block.

The secondary sewing also differs in the two traditions. The secondary sewing in Armenian endband-making is of a consistent design, a zig-zag which resembles two chevrons pointing in opposite directions. The number of secondary cord cores used, however, can range from one to four.[41] There is much greater variety in Greek/Byzantine secondary sewing. The most frequently

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[39]Federici, 34-35.

[40]Ibid., 35, figure 26 illustrates the three methods.

[41]See Chapter 2, "Endbands" section.

observed is a type of chevron design sewn over a primary sewing made with two cores.[42] There are also at least three ways of embroidering endbands made with single primary cores.[43] In addition, there seems to be at least one method of sewing on a separately made chevron-embroidered piece over the primary sewing.[44]

Doublures and Leather Covering

Before discussing the leather which covered the boards and the spine, we must discuss the doublure--or lack of it, in the case of Greek bindings. As stated in Chapter 2, most Armenian manuscripts have a cloth doublure glued or pasted to the inside boards. By contrast, it seems that most Greek/Byzantine manuscripts do not use any kind of doublure or pastedowns to cover the inside boards, leaving the wooden boards (and therefore the board attachments) completely visible.[45] The lack of any cloth,

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[42]Federici, 36, fig. 27 [4].

[43]Ibid., 36, fig. 27 [5,6,9].

[44]Van Regemorter, "La reliure byzantine," 128 and Di Febo, et al., Legature Bizantine Vaticane e Marciane (exhibition catalogue), 37-38 and 18, figure 12.

[45]Neither the van Regemorter articles, the Federici/Houlis study nor the Marciana catalogue (see previous footnote) mention any kind of doublure or pastedowns, and only plate XXXIV of the Federici/Houlis study shows a Greek manuscript a pastedown (and it is not clear as to whether this was original or was added on later.)

leather, vellum or paper linings on the inside of the boards may perhaps have occurred simply for reasons of economy, although one should also consider the possibility that whatever may have lined the boards may have so deteriorated that we no longer have any evidence of it. Perhaps it was not considered inaesthetic by Greek binders to leave the wooden boards exposed, and they felt no need to cover them.

The next step would have been to cover the boards and sewn text block with leather. Greek bindings are commonly covered with either tanned goat or sheepskin, which was usually blind-tooled.[46] The tooling decoration will not be discussed in detail here, except for the tooling found on the spine leather. It was mentioned in Chapter 2 that the majority of Armenian bindings were tooled with vertical lines on the spine, which perhaps may have served a function in making these tight back books easier to open. This trait does not seem to be found on Greek bindings. The Vatican study recorded eight main types of decorative spine tooling.[47] Although a number are composed of straight tooled lines arranged in some sort of geometric pattern, and others are made up of small decorative tools, none seem to be simple parallel vertical lines as in the

[46]Federici, 35.

[47]Ibid., 68.

Armenian examples. The Greek spine tooling seems to be a continuation of the decorative patterns used on the covers for aesthetic reasons. In both traditions the leather turn-ins are usually cut neatly on the inside boards, and the corners are most often mitered at a 45 degree angle.[48]

One difference found between Greek and Armenian bindings related to the leather covering seems to be in the formation of the headcaps--that part of the leather at the head and tail closest to the endbands. The large piece of leather which was used to cover the book must be cut near the spine to allow for part to become the turn-in, and the small piece near the endbands must be folded and placed behind them. (See Figure 1). If this is unclear, it may help to think of how one used to cover school books with paper, making a cut in the paper near the head and tail at the spine, thereby producing a small tab which would be tucked behind the endband area. Six different types of headcaps were identified in the Vatican

[48]Ibid., 35-37 and 79-81. Note that in the Vatican study of Greek bindings ten different types of corner angles have been identified (variations of mitered corners, overlapped corners or "universal" corners with a "tongue" of leather in between), as well as three ways of finishing or not finishing the turn-ins. This type of information could be useful in future research when one has more information on the provenance and date of the bindings. One could then possibly determine whether certain Greek workshops or monasteries consistently used a specific type of mitering, which could help to formulate a typology and perhaps eventually determine in which workshop a book lacking a date or provenance was bound.

study of Greek bindings, the most common type completely covering the endband tie-downs into the boards, with the leather appearing to form a slight fold or bump at the end of the raised endbands.[49] Most Armenian manuscripts had slits cut in the turn-ins for the formation of the headcaps, and sometimes had small wooden pegs stuck to the tab thus formed (see Figure 12 for a photo of such a tab in an Armenian binding, although this example does not have a wooden peg). Similar pins have been found on the turn-ins of some Greek manuscripts in the Vatican study, but it is not clear from the published information if these pegs were found on tabs or simply at some other part of the turn-in.[50] No slits or tabs are mentioned in the publications, nor can any be seen in the diagrams of the six types of headcaps used in Greek manuscripts, and none of the available photos of the inside boards show any slits or tabs in the turn-in leather.[51] It should be noted that a few peculiarities which were found infrequently in Armenian manuscripts--namely the string occasionally observed in the fold of the headcap, and the wooden wedge placed at the raised area of the endbands (see Chapter 2)-

[49]Ibid., 36 and 38, figure 30.

[50]Ibid., 36; Petherbridge, Workshop.

[51]Ibid.

-were not mentioned in any of the publications on this topic as occurring in Greek bookbindings.

Before leaving the topic of the leather covering, it should also be mentioned that Greek/Byzantine manuscripts were not made with any type of leather fore-edge flap as found in the majority of Armenian bindings, nor with envelope flaps as seen in Islamic bindings.[52]

Edge Coloring

The majority of Greek bindings seem to have no edge coloring, and are left plain.[53] The author and/or title of the manuscript is occasionally written on the fore edge or tail (something not yet encountered in any of the Armenian manuscripts examined in this study). A few are monochrome tinted, but the color has not been specified in the available publications, although it seems that some may have been colored with ink.[54] It is also stated that this monochrome coloring was often done at a later time, but it is not clear what evidence led the authors to come to this conclusion.[55] Some Greek bindings can also be found with

[52]See Chapter 5 for further discussion on Islamic fore edge flaps.

[53]Federici, 36 and 79-81; van Regemorter, "La reliure des manuscrits grecs," 9.

[54]Ibid.

[55]Federici, 36. It is possible that the edges were colored later, perhaps even centuries after the book was constructed. Note also that in some Armenian manuscripts

monochrome or polychrome designs on the edges, usually an interlace or geometric design.[56] A few Armenian manuscripts examined were also embellished with edge decorations, generally curvilinear designs,[57] although most were colored red on all three edges.

Fastening System

Both traditions usually added some type of fastening system to the book in order to keep the it closed and protected from dust and warping. This was especially important for parchment manuscripts, since parchment is particularly sensitive to changes in temperature and humidity and therefore easily subject to distortion. These clasps were normally in the form of straps attached to the back board, which reached around to fasten onto the front board by a variety of means. The fastening system

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there is clear evidence that the edges were colored after the leather was glued to the boards, since traces of red were found on the leather covering the board edges--for example, San Lazzaro Ms. 123, a Psalter copied in Constantinople in AD 1668. Whether such edge coloring was done at the time the book was bound or centuries later has yet to be determined.

[56]Federici, 152, plate XXXVII.

[57]See for example: Spencer Collection Arm. Ms. 6, a Gospel probably written in the 17th c.; Walters Art Gallery Ms. 543, a Gospel from Xizan dated AD 1455 and restored in 1617; Bibliothèque Nationale Ms. Arm. 17, a Gospel dated AD 1356 from the Crimea; San Lazzaro Ms. 623, a Bible from Persia dated AD 1648; and San Lazzaro Ms. 1173, a Ritual from Sis and dated AD 1345 (but rebound later).

used with Greek manuscripts usually consisted of leather straps attached to the back board, but the thongs were more elaborate than the simple ones usually found on Armenian bindings. Each strap was made of a single long piece of leather which had been slit in three on each end, and each of the these six strips was punched with a row of holes and braided so that three braided straps remain.[58] The thong was threaded onto a metal closure, usually brass, before it was braided, and this metal piece was attached to a metal pin on the front. Contrary to the fastening system used in Armenian bookbindings, however, these metal pins were placed on the front board thickness, not on the front plane of the board a few centimeters from its edge.[59] There may also be leather straps located at the head and tail of the book, in addition to those at the fore edge.[60] The straps were attached to the back board through drilled holes as in the Armenian examples; however, anywhere from one to three holes per strap in a variety of arrangements can be found. The leather turn-in on the back board can be dealt with in different ways as

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[58]A very clear drawing of this braided leather thong showing how it was made can be found in Federici, 38, figure 31.

[59]Federici, 36-40; van Regemorter, "La reliure byzantine," 129-131; van Regemorter, "La reliure des manuscrits grecs," 4 and 15; Petherbridge, Workshop.

[60]Ibid.

well--the holes might have been drilled through the leather turn-in, the turn-in could have been completely cut away at the point where the holes were to be drilled, or it could have been cut in such a way as to leave a small tab which remained to cover the holes.[61]

Discussion

We have seen that although there are a number of important similarities between Greek and Armenian bookbindings, there are also some significant differences. Some of these differences are decorative or are not structurally important to the book, such as the grooves gouged into the edges of the boards, the variety of ways in which the raised endbands can be worked (since their basic structure of a primary core tied down into the boards is the same), the type and location of the fastening system, the lack of a fore-edge flap in Greek bindings, the variation in notching found in Armenian bindings, or the use (or lack) of doublures on the inside boards. Others are a direct result of certain choices made in the type of materials used or are structurally important; for example, the thick boards allow for the making of the edge grooves and also permit the development of numerous board and endband attachment methods (using

[61]Federici, 39, figure 34.

tunnels and channels), something which is impossible to do with the extremely thin wooden boards used for Armenian bindings. The fact that the wood grain is horizontal in Armenian boards but usually vertical in Greek boards is significant, and is directly related to the thickness of the boards used. But there is one especially important structural differences which should be noted--Greek books are made using an unsupported sewing structure, while Armenian manuscripts are made with supports. This deviation in structure is a noteworthy difference between the two traditions, and one which will be looked at more closely in subsequent chapters.

Another striking thing to note is the greater variety to be found overall in Greek bindings when compared to Armenian bindings. There seems to be more choice in how to work certain details, seen, for example, in the way of drilling holes into the boards in preparation for the board attachment, in the different board attachment methods, in the type of sewing (which is always unsupported, however), in working the endbands or drilling the holes for the endband tie-downs, or in where to place the clasps. There are at least three methods for sewing a primary endband core and four to five methods of secondary sewing. Armenian bindings as a whole are much more uniform. The first thing that comes to mind is that these structural deviations may be indicative of different

workshops, monasteries, or schools, and could eventually be significant for identifying the geographic location of a book's construction and therefore developing a typology. To my knowledge this type of study has not yet been undertaken for Greek bindings. It would necessitate examining a large enough group of Greek manuscripts which include colophons giving at least the date and provenance of the copying of the text, in order to have a terminus post quem for the binding. Unfortunately, it appears that most Greek manuscripts lack colophons, making it extremely difficult to develop such a typology.[62] There are, however, at least a few Greek manuscripts known to have colophons indicating the date that the manuscript was rebound, written by the binder.[63]

The greater diversity in Greek/Byzantine bindings might also be attributed in part to the fact that they were produced over a much larger area by a more ethnically diverse, cosmopolitan population. This could have led to exposure to different bookmaking traditions, and/or to the

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[62]According to Prof. Leonardo Taràn of the Classics Department of Columbia University. However, Devreesse states that it is not rare for Greek manuscripts to have colophons. See Devreesse, Introduction à l'étude des manuscrits grecs, 46-58. Note that in the Vatican study of 112 manuscripts, only 23 are securely dated, or provide us with at least a terminus ante quem. Federici, 69-70.

[63]Harold Rideout Willoughby, "Greek Rebinding Colophons in Chicago Manuscripts," Annales de l'Institut Kondakov (Seminarium Kondakovanium) (Prague), XI (1940): 21-32.

development of slight variations in the original methods over the centuries. Perhaps this exposure to a more diverse population caused Byzantine society to be somewhat less conservative, something which might be reflected in their bookmaking traditions. Nonetheless, most manuscripts in the Byzantine Empire were produced in monastic scriptoria (or at least by clergymen, whether or not they actually lived in a monastery), although there were also some professional lay scribes.[64] Booksellers seem to be rarely mentioned.[65]

It is not surprising that there should be similarities in the bookmaking traditions of these two cultures. The ties between Greeks and Armenians go back very far, before the Byzantine era (and long before the Armenian language was written). Although it is not possible to discuss all the historical connections in great detail here, a few interesting examples of Hellenistic influence in Armenia should be mentioned. Under the reign of the Armenian king Tigran II the Great (95-56 BC), Hellenism had an important impact in Tigranocerta, his capital city. According to Plutarch, a Greek theater was built so that Greek plays could be

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[64]Nigel G. Wilson, "Books and Readers in Byzantium," in Byzantine Books and Bookmen, 9. (Washington D.C.: Dumbarton Oaks, 1975).

[65]Ibid., 4.

performed, Greek artists and scholars were brought to Tigranocerta, and Tigran's son Artavasdes even wrote Greek tragedies, orations, and histories.[66]

Armenia's strategic location between rivalling powers and on trade routes had always made it important, in both early and later periods. It was of great interest to the Byzantine Empire, and was at various times under the control of the Empire as the borders shifted over the centuries. Indeed, many Armenians migrated or were deported to Byzantine territory, Armenians (or people of Armenian descent) were often a major element in the military, and some of the Byzantine emperors were of Armenian descent (for example, the line of Basil I, beginning in the ninth century).[67]

Literary ties between Armenians and Greeks date from the earliest period of the invention of the Armenian alphabet in the 5th century AD by the scholar and

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[66]Plutarch Lives, "Lucullus" xxix (Loeb Classical Library, p. 567); "Crassus" xxxiii (Loeb Classical Library, p. 421).

[67]Peter Charanis, The Armenians in the Byzantine Empire, (Lisbon: Calouste Gulbenkian Foundation, 1963), 12-28; Sirarpie Der Nersessian, "Byzance et l'Armenie-problèmes et état des recherches," in Études Byzantines et Arméniennes, (Louvain: Imprimerie Orientaliste, 1973), 307-321 [originally presented at the Colloque Franco-Soviétique, Erevan, Oct. 1-10, 1968.] For the Justinianic period see N. Adontz, Armenia in the Period of Justinian: the Political Conditions Based on the Naxarar System, transl. by N. G. Garsoian (Lisbon: Calouste Gulbenkian Foundation, 1970). For a collection of his articles see N. Adontz, Études armeno-byzantines, (Lisbon, 1965.)

Christian cleric Maštoc'. Koriwn, his student, describes in his biography of Maštoc' how and why Maštoc' sent some of his students to Samosata to learn Greek and others to Edessa to learn Syriac.[68] Maštoc' himself was learned in the Greek language and in Greek literature.[69] He modelled the Armenian alphabet on the Greek--the script is written from left to right, as in Greek, instead of right to left as in Syriac and some other Semitic languages, and the design of most of the letters is based on Greek.[70] After the alphabet was developed, the students translated Greek and Syriac works into Armenian, and were also ordered to bring back authentic copies of religious books to Armenia with them.[71] At this time, the Bible was translated into Armenian from the Greek version of the Septuagint, as were many other sacred writings including the early Greek and Syrian Church Fathers. Other important works were translated from Greek, such as the Chronicle of Eusebius, the Alexander Romance by Pseudo-Callisthenes, and the writings of Socrates and Aristotle, although some of these

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[68]Koriun, The Life of Mashtots, trans. by Bedros Norehad (New York, 1965), 30. [Reprinted in Vark` Mashtots`i -Koriwn (Delmar, New York: Caravan Books, 1985)].

[69]Ibid., 27.

[70]Sirarpie Der Nersessian, The Armenians (London: Thames and Hudson, 1969), 85.

[71]Koriun, 43.

were translated later than the 5th century AD.[72] The earliest Armenian scribes (Maštoc' and his students) were unquestionably exposed to Greek books, and therefore very probably to Greek bookbinding practices.

The next chapter will consist of an examination of the bookbinding techniques of the Syrians and Georgians, two other neighboring Christian cultures, enabling us to compare their methods with those traditionally used by Armenian binders of the same period.

[72]Robert W. Thomson, "The Armenian Version of the Georgian Chronicles," Journal of the Society for Armenian Studies 5 (1990-1991): 82-83. For further information on translations into Armenian, see: G. Zarbhanalian, Matenadaran Haykakan T'argmanut'eanc' Naxneac', dar 4-13 [Catalogue of Ancient Armenian Translations] (Venice: San Lazzaro Press, 1889).

Chapter 4

A Comparison Between Armenian Bookbinding and Other East Christian Traditions

Introduction

This chapter will describe and compare the bookbinding techniques of East Christian traditions such as Syriac and Georgian with the Armenian tradition, in order to assess which, if any, of them may be related to the Armenian methods. A brief historical overview will also be provided for readers unfamiliar with the area in order to illustrate the contact which existed between these different yet neighboring cultures. Unfortunately, the available published information on the bookmaking traditions of these societies is very sparse, and I have had to gather data from disparate sources, coupled with the direct examination of only a few manuscripts, and supplemented by some unpublished material provided by scholars who have personally examined such manuscripts. A more thorough evaluation can only be provided after the direct study of at least a few hundred manuscripts of each type, as was done with Armenian manuscripts for the present study, a task beyond the scope of this project. However, it is hoped that this material will at least

provide an idea of the direction in which further research should continue.

Syriac Manuscripts

The available published information on Syriac bindings is scanty, indeed, practically nonexistent. The details to be presented here have been compiled from brief citations found in a few catalogues of Syriac manuscripts which make some mention of the binding or other codicological information of interest, a lecture on East Christian bookmaking traditions,[1] and my own examination of two Syriac manuscripts.[2] Since there is no adequate published secondary work on the subject, it is clear that direct study of a large number of Syriac bindings would be

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[1]Guy Petherbridge, "Cross-cultural Relationships in Christian-Oriental and Islamic Bookbinding Traditions," Paper presented at the International Conference: La Legatura dei Libri Antichi tra Conoscenza, Valorizzazione e Tutela. Parma, Italy, 16-18 November, 1989. [Hereafter referred to as "Petherbridge, Parma paper."]

[2]American Bible Society, (New York, N. Y.), Ms. Syriac No. 1, Gospels, traditional Peshitta, c. 13th century text. [Hereafter referred to as "ABS Ms."] This manuscript had been rebound, but the present binding structure corroborates what Petherbridge describes as being a traditional Syriac structure. Freer Gallery of Art (Washington D. C.), Ms. 37.41, a Peshitta New Testament, text dated A.D. 1213-1214. [Hereafter referred to as "FGA Ms."] The covers of this codex are missing, and only some leather fragments remain on the spine. A description of this manuscript is published in: James R. Price and Philip M. Seymour, "Syriac Manuscripts in the Freer Gallery of Art, Washington, D. C.," Oriens Christianus 55 (1971): 161-163.

necessary; however, as mentioned above, time constraints would not allow for such an investigation.

Most extant Syriac manuscripts are in codex form, but it should also be mentioned that, as in other nearby cultures, scrolls also exist, especially for use as magical charms.[3] Both paper and parchment were used for writing these books, and palimpsests can also be found.[4] Paper was in common use by the 13th century, and was probably sized with starch.[5] There is no mention in the literature as to whether the paper was polished. The leaves were often ruled before writing, usually either with lead or a sharply pointed instrument (for vellum), or with a blunt point (for paper or vellum). The leaves of very few manuscripts were ruled with ink. Although no mention is made of the possible use of a ruling frame,[6] one would expect that it was not uncommon, since ruling

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[3]James T. Clemons, "A Checklist of Syriac Manuscripts in the United States and Canada," Orientalia Christiana Periodica 32 (1966): 235; British Library, The Christian Orient (London: The British Library Board, 1978), 55; Willis Hatfield Hazard, "A Syriac Charm," Journal of the American Oriental Society 15 (1893): 284-296.

[4]W. H. P. Hatch, Album of Dated Syriac Manuscripts (Boston: American Academy of Sciences, 1946), 3-4; W. Wright, Catalogue of the Syriac Manuscripts in the British Museum Vol. 3 (London, 1872), xxv-xxvi.

[5]Hatch, 6 and 8.

[6]Ibid., 14-17. Hatch also describes the different time periods in which certain types of ruling lines were more commonly used.

frames were customarily used in other neighboring traditions and indeed are still used today by some Syrian scribes.[7] A page could be marked off in either one, two, or three columns. Three-column pages seemed to have been in use only in very early periods (5th-7th centuries AD). One- and two- column pages were apparently used equally up to the 16th century, and do not seem to be related to the content of the manuscript.[8]

The ruled leaves would next have been folded into quires, and all existing Syriac manuscripts are made up of multiple quires. The Syrians use a system similar to the Armenian and Greek for representing numerals,[9] and the quires were usually numbered with Syriac letters, either at the end of each quire only, or at the beginning and end of each quire. On occasion Syriac arithmetical figures or Greek, Coptic, or Arabic letters were used for numbering.[10]

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[7]According to Prof. S. Peter Cowe who has observed them in Jerusalem, Syrian monks there, in Tur Abdin (eastern Turkey), and the Monastery of Mar Ephrem in Glane (Holland), still use a ruling frame today for ruling leaves. Ruling frames are still used by scribes of the Old Believers in Siberia; see: N. N. Pokrovskiĭ, "Western Siberian Scriptoria and Binderies: Ancient Traditons among the Old Believers," transl. by J. S. G. Simmons, The Book Collector XX (Spring 1971): 20-21 and plate 1.

[8]Hatch, 13-14.

[9]Rubens Duval, Traité de Grammaire Syriaque (Amsterdam: Philo Press, 1969), xiii.

[10]Hatch, 23; Wright xxvi. It is not clear from the published information, however, whether Syrian manuscript quires were numbered using the "numeric" or "alphabetic" numbering system, which both use the Syriac alphabet.

Both the reed and the quill were used as writing instruments,[11] and recipes for the making of the ink used are recorded in some manuscripts.[12]

Syrian scribes usually wrote a colophon at the end of the work after they had completed copying it. The content and style were very similar to that of Armenian colophons, and included the name of the scribe (including self-effacing comments about his own unworthiness and lack of talent), the date and place the text was copied, names of family members (especially male) to be remembered, names of ruling ecclesiastic superiors (bishops, etc.), name of the patron of the manuscript and sometimes the price paid for it, and a request for prayers by the reader.[13] Curses against anyone who might steal or damage the book were also occasionally included.[14]

After the text was completed, it would be bound as a codex. Since the Syriac language is written from right to left, the spine would be located at the right, and the upper cover would open from the left. The boards were usually wooden, and in the ABS manuscript examined, the

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[11]Hatch, 8.

[12]Harch, 10 note 2; Wright, xxvi.

[13]Hatch, 17-18; Wright, xxvii. The colophon of FGA Ms. 37.41 has been translated into English in Price and Seymour, "Syriac Manuscripts in the Freer...", 162.

[14]Wright, xxix.

wooden boards were quite thick (12-13 mm.) and were cut with a vertical grain (the front board was partially missing because of a vertical crack, and a second vertical crack was repaired by sewing).[15] There were no squares in this manuscript.

The text block was sewn separately, probably with an unsupported link-stitch sewing.[16] It is not known whether notches were used at the sewing stations.[17] However, the spine of the ABS Ms. is smooth, without any raised bands, which could indicate that the sewing was recessed into some type of notch. The boards were prepared separately for attachment to the text block. Holes were drilled straight down into the wooden boards to correspond with each sewing station. A type of cord "anchor" would next be fashioned by taking a piece of cord, winding it around the first hole a few times, then (without cutting the cord), taking it to the next hole, winding it around that hole a few times, going to the next hole, and so on. Then, either the slips from the sewn text block or a

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[15]A small number of widely-spaced tiny holes were actually made above and below the crack, and large X-shaped stitches were made to keep the two parts of the board together.

[16]Petherbridge, Parma paper. The sewing was not visible on either the ABS or the FGA manuscripts.

[17]Petherbridge did not mention them, none could be seen in the published photographic reproductions of illuminations of Syriac manuscripts, and gutter repairs prevented me from seeing any in the ABS Ms. There were no notches in the FGA Ms.

separate cord was used to attach the "anchor" on the boards to the chain-link sewing.[18]

The spine of the ABS Ms. was lined with a piece of cream-colored tabby weave cloth (either cotton or linen). Below this, however, a piece of thin blue tabby cloth could be seen. The spine lining covered one-third to one-half of the wooden boards. The spine of the FGA Ms. was lined with five layers of coarse white cloth.

The endbands were raised, similar to the type we have already observed in Armenian and Greek bindings, with the tie-downs attached to holes previously drilled into the boards.[19] As in Armenian endbands, there is one thick primary cord core which is tied-down into the boards and sewn through the spine lining on the spine through the center of each quire.[20] In both the ABS and FGA Mss., no secondary sewing was visible since only the primary core remained on each one, although the FGA Ms. had remnants of yellow and green silk threads. However, the Bibliothèque Nationale book on endbands cited above describes and

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[18]Petherbridge, Parma paper, and my observations of the ABS Ms. The FGA Ms. no longer had any boards.

[19]Petherbridge, Parma paper, and my observations of the ABS Ms.

[20]Les tranchefiles brodées-étude historique et technique, (Paris: Bibliothèque Nationale, 1989), 76-77. According to this book, the Armenian and Syriac primary cores are exactly the same.

illustrates two types of secondary sewing from Syriac endbands, one from the 15th century and one from the 16th.[21] Syrian binders seem to have also employed a type of weaving for the secondary sewing as in Armenian endbands, but the end result is different in appearance than the Armenian ones. A chevron-type of embroidery is used on the 15th century example illustrated; however, only two colors of thread are used and there are three rows of chevrons, instead of one and a half as in the Armenian endbands.[22] The second example shown, on a manuscript dated AD 1510, again uses only two colors but the embroidery gives the appearance of a thick Z-twisted thread.[23]

The book was next covered with leather, and could be left plain or blind-tooled.[24] The ABS Ms. had no fore-edge flap, and neither Wright, Hatch, nor Petherbridge mention such flaps. However, one published work describes one Syriac manuscript binding thus: "Reliure maroquin marron foncé à rabat" [Dark brown morocco binding with flap].[25]

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[21]Ibid., 80-83.

[22]Ibid., 80-81.

[23]Ibid., 82-83; compare photos of the traditional Armenian endband (p. 78) with the Syriac ones (pp. 80, 82).

[24]Wright, xxix.

[25]Les tranchefiles brodées..., 75, in describing Bibliothèque Nationale Mss. Or., Syriaque 224.

It is not clear whether this is a common feature of Syriac bindings or not. The inside boards were probably lined with cloth.[26] At least some Syriac bindings were equipped with a fastening system of pins attached to the edge thickness of the boards, over which a strap with a metal fitting would fit.[27] This is similar to the clasps found on Greek bindings, described in Chapter 3.

Some manuscripts were furnished with page markers on the fore edge margins in the form of pieces of cloth or thread. The small pieces of fabric were glued or pasted to the fore edge of a leaf, and the hanks of thread were sometimes actually sewn through the margin of the page, protruding from the fore edge when the book was closed. These page markers probably marked the main divisions of a work, enabling the reader to turn to a specific section quickly. (See Figure 13 for an Armenian example). Some illuminated books were provided with large protective

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[26]Wright, xxix, says they were lined with linen or silk. In Bosch et al., Islamic Bindings and Bookmaking (A Catalogue of an Exhibition. The Oriental Institute. The University of Chicago May 18-Aug. 18, 1981), (Chicago: The University of Chicago, 1981), 65, it is stated that textile doublures of blue linen were common in Syriac bindings, but no source for this statement is given. The ABS Ms. did not have a cloth doublure, but this manuscript was damaged and had been extensively repaired.

[27]Berthe van Regemorter, Some Oriental Bindings in the Chester Beatty Library (Dublin: Hodges Figgis & Co. Ltd., 1961), plate 3b. [Ms. 702, 8th or 9th century].

pieces of cloth stitched into the binding and facing the illumination.[28]

Although it is not possible to discuss decoration here in any detail, it is worth describing a few decorative features which are briefly mentioned in the available publications, since, as we shall see, there are some similarities with Armenian bindings. Wright has cited the description of one binding from a catalogue describing a private manuscript collection, later given to the British Library. This manuscript (now British Library Ms. Or. 8729), was made with wooden boards and covered with leather, and was "curiously ornamented and studded with brass-headed nails."[29] Syriac Ms. Or. 13465 in the British Library was also decorated with similar brass studs.[30] These "brass-headed nails" may be the same as those seen on some Armenian manuscripts, such as Freer Gallery of Art Ms. 44.17 (although they were not

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[28]Wright, xxix.

[29]Ibid. According to Jules Leroy, Les manuscrits syriaques à peintures conservés dans les bibliothèques d'Europe et d'Orient, Vol. 1 (Paris: Librairie Orientaliste Paul Geuthner, 1964), 106 note 3, this manuscript (a Gospel Lectionary originally in the collection of Lord Robert Curzon de la Zouche) entered the British Library in 1917 as Or. 8729, which is why it is not part of Wright's Catalogue of the Syriac Manuscripts in the British Museum, published in 1872. However, see footnotes 33-35 below for further details on this binding.

[30]The Christian Orient, 76.

necessarily made of brass).[31] A number of other Armenian manuscripts examined were found to have a large quantity of holes on the front cover which were caused by similar round "studs."[32] Round outlines and shadows could be seen around each hole from the studs, now missing.

Few Syriac blind-tooled leather bindings have been photographed or described in the publications available. However, two descriptions found are of interest. The previously mentioned Syriac manuscript dated AD 1230 (British Library Ms. Or. 8729) originally in a private collection at the time Wright's catalogue was written, has

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[31]FGA Ms. 44.17, is a rebound Gospel written in AD 1253 in Cilicia. The metal studs under discussion may be very late additions to the covers, however. FGA Ms. 44.17 was rebound/repaired in the early 18th century, according to a colophon. S. Der Nersessian, Armenian Manuscripts in the Freer Gallery of Art, (Washington, D.C.: Smithsonian Institution, 1963), 19, 108-109. This binding has a number of silver studs nailed onto the upper board in the shape of a cross, and also includes a cruciform shaped glass or crystal in the center which probably once held a relic. San Lazzaro Ms. "Kurdian No. 25", a fragmentary 11th century Gospel now detached from its boards, also has heavy metal studs attached to the blind-tooled covers. Interestingly, this rebound Armenian manuscript was the only one seen in this study which was made with what appears to be the type of board attachment used by Syrian binders, and also has three layers of cloth used for the spine lining. The remainder of this Gospel is now at the Freer Gallery, FGA 33.5, 47.2-4. Ibid., 1-6. See also Armenian Manuscripts. An Exhibition at the University of Kansas Library, December 1955, Preface and notes by Werner Winter, 2.

[32]For example, New York Public Library (Spencer Collection) Arm. Ms. 1, a Gospel dated AD 1301 and probably rebound in Isfahan in the 17th century; Hazarian Collection Ms. 5, a Gospel written in AD 1660; San Lazzaro Ms. 69, a rebound Cilician Gospel from AD 1244.

been photographed in Leroy and further described in a later publication.[33] This manuscript was rebound, but the original blind-tooled leather was saved and pasted on the inside boards as a doublure.[34] The upper board was blind-tooled with a rope-work border, and was further decorated with a rope-work cross on a pedestal and a six-pointed star enclosed in a circle in each of the four corners. The lower board was tooled with the same guilloche border and a rectangular knotwork design in the center. The guilloche designs were all accomplished with a curved tool made of hatched lines.[35] Another manuscript (British

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[33]Leroy, Les manuscrits syriaques..., Vol. 1, 105-106 and Vol 2., plate 1, no. 3 and 4; The Christian Orient, 76. The text is a Gospel Lectionary written at Urfa (Edessa).

[34]This manuscript is the one described in note 29, originally from the collection of Robert Curzon Zouche, which he states as having "brass-headed nails". Zouche further described it thus: "...the inside of the binding is lined with a curious piece of embroidered or woven linen of the same date as the book." See: Robert Curzon Zouche, A Catalogue of Materials for Writing (London: W. Nicol, 1849), 12-13, and Wright, xxix. Leroy states that manuscript Or. 8729 became part of the British Museum in 1917 and that it originally belonged to Zouche, and that Wright described it in his catalogue as having its present doublures: "Déjà à cette époque il avait l'aspect qu'il a aujourd'hui. Ce n'est donc pas de la Zouche qui a opéré le transfert de la reliure de l'extérieur à l'intérieur." (Leroy, Les manuscrits syriaques..., Vol. 1, 106, note 3). Zouche described his manuscript (above) as having "brass-headed nails" and a cloth doublure. The rebinding and pasting of the original leather to the inside boards must have been done after Zouche published his catalogue in 1849.

[35]Since this is apparently the same binding described by Zouche as once having had "brass-headed nails" on it,

Library Or. 13465) is described as being decorated with a "...crudely tooled cross, surrounded by borders of rope-work and punched dots." The back board has a similar border and a central panel of rope-work interlace. The upper and lower boards were further decorated with an arrangement of protruding brass studs.[36] Both these bindings are very similar in design and execution to the many stepped crosses on Armenian bindings already described in Chapter 2 (see Figure 14 for an Armenian example). Stepped crosses are also common in Syriac manuscript illumination, and probably had an apotropaic as well as a sacred significance.[37]

Besides these apparent decorative similarities with Armenian manuscripts based on the few published descriptions available of Syriac bindings, there are a number of other similarities with Armenian codices. Some of these are related to the structure and technique, although we must always keep in mind the paucity of

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we must assume that the studs were removed in rebinding. In the photograph of the blind-tooled leather of this manuscript provided in Leroy, Vol. 2, (plate 1, no. 3 and 4) what might be holes or shadows left from the studs are evident.

[36]The manuscript is a New Testament with homilies, written in A.D. 1475 in Serug. The Christian Orient, 76.

[37]Leroy, Les manuscrits syriaques..., Vol. 1, 113-119, and Vol. 2, plates 3-9; Lawrence Nees, "Two Illuminated Syriac Manuscripts in the Harvard College Library," Cahiers Archéologiques 29 (1980/81): 132-140.

available information. A larger sample would provide more data which would enable firmer conclusions to be made. The most striking similarity is found in the construction of the endbands, which are raised, with the primary cord core tied down into the wooden boards and at the spine through the center of each quire. Although the primary core seems to be exactly the same in the two traditions, the secondary sewing is not. The board holes are probably drilled straight down in both traditions, without grooves or tunnels. Note also the use of a cloth spine lining glued or pasted to the back of the sewn text block in both Syriac and Armenian bookbindings, although it is possible that multiple layers of fabric are used in Syrian bindings. Cloth doublures are used in both traditions, as are the occasional page markers and a thin protective cloth over an illumination. However, in other structural elements there are important differences. If Petherbridge is correct in his assessment of the sewing technique as being an unsupported link-stitch, and in his description of the board attachment, we again see that Armenian binders are alone in using supported sewing and their unique board attachment method in the Near East. There may be other differences in certain characteristics between the two traditions, such as the use of notches, the usage of thick boards with a vertical grain in Syriac books as opposed to the contrary in Armenian books, and

the apparent lack of edge coloring in Syriac manuscripts. However, definitive conclusions cannot be made about these features since enough information is not yet available.

Ties between Armenia and Syria can be found at an extremely early date, with literary evidence in Armenian sources dating from the fifth century AD with the invention of the Armenian alphabet. In the 5th century biography of Maštoc' (the inventor of the Armenian alphabet) written by Koriwn, one of his students, there is abundant evidence of this connection. The need for an alphabet was clear to Maštoc', since the Armenian people could not understand the Christian services which were given in either Syriac or in Greek, depending upon whether they were in Persarmenia or in Byzantine Armenia. He and the Katholikos, Sahak (the head of the Armenian church) presented their idea of developing an alphabet for the Armenian language to King Vramšapuh of Persarmenia. The king had previously consulted with a Syrian bishop named Daniel who apparently had an alphabet which he thought could be adapted for the Armenian language. It was found to be inadequate.[38] Maštoc' then traveled to Syria, and sent some of his students to study in a Syriac school in

[38]Koriun, The Life of Mashtots, trans. by Bedros Norehad (New York, 1965), 29-30. [Reprinted in Vark' Mashtots'i--Koriwn (Delmar, New York: Caravan Books, 1985)]. It is not known with certainty whether this "Danielian" alphabet was the Syriac alphabet, an adaptation of it, or something else.

Edessa and others to Samosata to learn Greek.[39] After he invented the Armenian alphabet, he sent more students to Edessa to translate works of the Syriac fathers into Armenian (as well as others to Greek regions to translate Greek writings).[40] In addition, some Greek works were translated into Armenian not from the original Greek rendering, but from their Syriac translations.[41] It is clear that from the creation of the alphabet the earliest translators were in close contact with both Greek and Syriac books, and must have originally learned the craft of bookmaking from those areas. Although we may never know precisely what 5th century Greek, Syriac, or Armenian bookbindings looked like, it would be logical that they should have closely resembled each other at first, and later each developed their own special character as time passed. Let us also not forget that the Syriac Jacobite

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[39]Ibid., 30.

[40]Ibid., 43.

[41]Examples of early Greek works translated into Armenian from Syriac versions are the Ecclesiastical History of Eusebius of Caesarea and the Hexaemeron by Basil of Caesarea. Robert W. Thomson, "The Armenian Version of the Georgian Chronicles," Journal of the Society for Armenian Studies 5 (1990-1991): 81-82. For further information on translations into Armenian, see: G. Zarbhanalian, Matenadaran Haykakan T'argmanut'eanc' Naxneac', dar 4-13 [Catalogue of Ancient Armenian Translations] (Venice: San Lazzaro Press, 1889). See also V. Inglisian, "Die Armenische Literatur," in Handbuch der Orientalistik (Armenisch und Kaukasische Sprachen), ed. by B. Spuler (Leiden: Brill, 1963), esp. pp. 158-159.

church and the Armenian church are both Monophysite, suggesting that close relationships between the two should not be unexpected, even in later periods.[42]

Affinities have also been found between Armenian and Syriac manuscript illumination. For example, miniatures from the 9th century "Queen Mlk'ē Gospel" (San Lazzaro Ms. 1144) have been compared and contrasted to the 6th century Rabbula Gospel (Florence, Laurentian Library, cod. Plut. I, 56).[43] Armenian manuscript illuminations from the 11th century "Melitene group" have been noted to have a number of resemblances with Syrian miniature painting, for example the custom of placing the image sideways (i.e., the head of the subject is placed at the fore edge), the narrative composition or action reading from right to left instead of the opposite (the Syriac language is written from right to left), and the depiction of the four

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[42]In the Armenian monastery of St. John in Muš, one chapel was even reserved for the Syrian Jacobites. N. G. Garsoian, "L'indépendance retrouvée," in Histoire des Arméniens, Gérard Dédéyan, ed. (Toulouse: Éditions Privat, 1982), 254.

[43]Sirarpie Der Nersessian, Armenian Art (Paris: Arts & Metiers Graphiques, 1978), 82-83; Fr. Mesrop Janashian, Armenian Miniature Paintings (Venice: Armenian Press of San Lazzaro, 1966), 21-22.

standing Evangelists on one page.[44] Iconographic and stylistic similarities have also been discussed.[45]

It is apparent from the above evidence that both in early and later periods Syriac manuscripts were accessible to Armenians (or at least to the literate clergy), who certainly saw and handled these objects. It would be reasonable to propose that the Armenians could have originally learned the craft of bookbinding from the Greeks and Syrians.

Georgian Manuscripts

Published information regarding Georgian binding structure is also sparse. Catalogues of Georgian manuscripts did not provide descriptions of the bindings other than the most general observations (such as "old brown calf binding").[46] The catalogue describing the Georgian manuscripts of Mount Sinai allowed me to conclude

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[44]Thomas F. Mathews and Avedis K. Sanjian, Armenian Gospel Iconography: The Tradition of the Glajor Gospel (Washington, D.C.: Dumbarton Oaks, 1991), 53-54, 61.

[45]Ibid., 60-61; Alice Taylor, "Vaspurakan Manuscript Illumination and Eleventh-Century Sources," in Medieval Armenian Culture, ed. by T. Samuelian and M. Stone, University of Pennsylvania Texts and Studies 6 (1984), 308.

[46]Frederick C. Conybeare and J. Oliver Wardrop, Catalogue of the Armenian Manuscripts in the British Museum to which is appended a Catalogue of the Georgian Manuscripts in the British Museum (London, 1913), 407; Frédéric Macler, Catalogue des manuscrits arméniens et géorgiens (Paris, 1908).

only that most of those manuscripts were bound with leather-covered wooden boards; occasionally a short description of the tooling was included.[47] The only photographs of Georgian leather bindings found were of such low quality that I was unable to conclude anything about the structure of these bindings.[48] A few photographs were available of silver bindings or in one case, the inscribed gold box in which the book was placed.[49] There are very few Georgian manuscripts located in the United States, and I did not have the opportunity to examine any personally. One publication was found in which the structure of these bindings was discussed (specifically, the sewing and board attachment method), based on the observation of only one manuscript.[50] The latest scholarship from Georgia itself on the topic of Georgian bookbinding is concerned with the decoration of the

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[47]Gérard Garitte, Catalogue des manuscrits géorgiens littéraires du Mont Sinai (Louvain: Imprimerie Orientaliste L. Durbecq, 1956).

[48]Nicolas Marr, Opisanie gruzinskih rukopisei Sinaiskogo monastyrja (Akad. Nauk SSR) (Moscow & Leningrad, 1940), plates I-IV.

[49]Vachtang Beridze, ed., Georgian Manuscripts (Tbilisi, 1970), plates 12, 48, 49, 50. Dorothy Miner, The History of Bookbinding 525-1950 A.D. (Baltimore: The Walters Art Gallery, 1957), #21, pp. 13-14 (Ms. 549, 17th C. Gospel).

[50]This description is found in: B. van Regemorter, "La reliure byzantine," Revue Belge d'Archéologie et d'Histoire de l'Art XXXVI (1967): 122-123.

bindings, and not with structure.[51] I was, however, fortunate to meet Prof. Z. Alek'sidze, Director of the Institute of Manuscripts in Tbilisi, Georgia, while he was in the United States in 1991, and he was able to furnish me with further information regarding some of the features commonly seen in these manuscripts.

The text blocks of Georgian manuscripts are usually made of parchment or paper leaves. A fragmentary Georgian papyrus Psalter of the 7th-8th century has also been found in the Sinai collection.[52] Scrolls also exist, upon which may be written magical or liturgical texts.[53] The quires of the manuscripts were commonly cut with V-notches in the fold to facilitate the sewing.[54] The boards were typically

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[51]Maia Karanadze, "Kartoli xelnaçeri çignis q'dis gapormebis istoriidan," [History of the Formation of the Binding of Georgian Manuscripts], Gulani (Tbilisi, 1989), pp. 241-265. I would like to thank Prof. Z. Alek'sidze, Director of the Institute of Manuscripts in Tbilisi, Georgia for sending me this article, and Prof. S. Peter Cowe of Columbia University for translating it.

[52]Garitte, Collection..., 6-7. This was numbered Ms. #98 by Garitte.

[53]Z. Alek'sidze, Interview, New York, N.Y. December 10, 1991.

[54]Alek'sidze, Interview; van Regemorter, "La reliure byzantine," 122; Beridze, plate 13 (showing a portrait of St. Matthew, Ms. A-484, Four Gospels dated A.D. 1054); Sirarpie Der Nersessian "The Gospels of Bert'ay: An Old Georgian Ms. of the Tenth Century," reprinted in Études Byzantines et Arméniennes, fig. 148-149 (Louvain: Imprimerie Orientaliste, 1973). [Originally published in Byzantion XVI (1942-1943): 226-285]; S. Amiranašvili, Gruzinskaja Miniatjura (Moscow, 1966), reproduces a number of leaves from manuscripts in the Georgian Institute of Manuscripts in which the V-notches are evident: Plates 10-

made of wood,[55] and according to Alek'sidze, they are usually thin. It is not known whether the wood grain is usually horizontal or vertical. Holes were drilled in each board at each sewing station for the board attachment, and according to van Regemorter, a groove was also cut horizontally on the exterior of the board between the hole and the joint.[56] If this feature is a common characteristic of Georgian bindings, it would imply two things--first, that the grain would probably not be horizontal, or the board would crack at the groove. Second, the boards must also be somewhat thicker than Armenian boards (which are usually only 2-5 mm. thick), otherwise, it would not be possible to gouge a groove into the wood. I have no information as to whether the manuscripts were made with squares or not, but one would expect to find that they were not, since the manuscripts from the other Near Eastern traditions examined so far do not have squares.

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12 (Ms. H-1660, Four Gospels from Djruchi, copied in AD 940), Plates 30-31 (Ms. A-1335, 12th century Gospel), Plate 52 (Ms. A-26, 13th century Gospel), and Plates 87-90 (Ms. H-98, Hymn in Praise of the Virgin, copied in AD 1681).

[55]Alek'sidze, Interview; van Regemorter, "La reliure byzantine," 122; Garitte, Collection..., passim. Garitte describes 34 manuscripts in this catalogue, of which 28 still had their bindings. Twenty-three of these 28 entries included short descriptions of the bindings, all of which were made with wooden boards.

[56]van Regemorter, "La reliure byzantine," 122.

A type of anchor was used for the board attachment. This was made by winding a string or cord three or four times around each hole previously drilled into the boards. One string was used, and the windings presumably lay in the previously cut groove. An unsupported chain link stitch was used for the sewing. According to van Regemorter, the sewing was combined with the board attachment.[57] The sewing thread would begin inside the first quire at the first sewing station, come out at the notch, pass underneath the corresponding "anchor" which had been previously prepared on the board, forming the attachment, and the thread would then again be passed back into the first sewing station. It would next be passed to the second sewing station in the center of the quire, come out on the exterior, pass under the second anchor on the board, go back into the same sewing station of the quire, and so on until the quire was completely attached to each anchor on the board. The second and subsequent quires would be sewn using an unsupported chain link stitch, which links the thread to the stitch directly below it. After all quires were sewn in this manner, the second board was attached to the text block in the same manner as the first board. Van Regemorter based the above

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[57]Ibid.

description primarily on one manuscript which was restored by Roger Powell.[58]

The next step would presumably have been to line the spine with a piece of cloth, but I have no evidence as to whether this was ever done in Georgian manuscripts. After lining, the endbands would have been worked. At least some endbands were raised,[59] however no further details are available about this feature. Photos of a silver plaque on Georgian Ms. A-484 show that the plaque was made with a raised area at the head and tail near the spine, indicating that it is probably covering raised endbands.[60]

Cloth doublures were probably used to line the inside boards, but sometimes paper or parchment pastedowns can be found.[61] The manuscripts were most commonly covered with

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[58]Ibid. I wrote to Roger Powell in 1990 in order to obtain further information about this binding. He responded shortly after receiving my inquiry, but unfortunately he could not recall this particular manuscript. He passed away a few months later at the age of 94.

[59]Alek'sidze, Interview; Amiranašvili, Plate 21, illustrates one illuminated page from the Four Gospels of Alaverdy [sic] (Ms. A-484, copied in AD 1054), in which raised endbands are evident at the tail.

[60]Amiranašvili, Plate 20 and Beridze, Plate 12, (Ms. A-484, Four Gospels dated AD 1054). The silver cloisonné plaque is undated, but may be approximately contemporary with the manuscript (11th century). The date of the binding is unknown. This raised area near the endbands is similar to the silver covers found on Morgan Library Ms. M 621, an Armenian Gospel from c. 17th century.

[61]Alek'sidze, Interview.

leather and were often blind tooled, although some were covered with cloth.[62] Some manuscripts apparently had a leather fore-edge flap similar to those found on Armenian bindings.[63] A fastening system was also employed, in which two or three leather straps would be attached to the back board at the fore edge. These would close onto the front board by means of some kind of pin.[64] However, some photos of Georgian manuscripts with silver covers show the closure system of the silver plaques to be similar to Greek closures, since they are found on the narrow edge thickness of the boards, at the head, tail, and fore edge.[65] At least one manuscript (without silver covers) was found with the pins on the edge thickness of the front board.[66]

Although the information available is admittedly limited, we can still make a few comparisons with Armenian bookbinding. A number of common features are found, as with Greek and Syriac bindings, such as leather-covered

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[62]Ibid. It is likely that the cloth-covered bindings were made in much later periods, but I have no further information about this feature.

[63]Alek'sidze, Interview.

[64]Ibid.

[65]Beridze, plates 48 and 49 (Mss. Q-907 and Q-906, both 12th century Gospels, although the date of the silver covers are not indicated).

[66]Amiranašvili, Plates 40, 42, 49 (12th century Gospels from Djruchi, Ms. H-1667).

wooden boards, and notches cut in the quire folds. It is possible that some other important characteristics may be shared, such as raised endbands, a fore-edge flap (this may possibly be the only other bookmaking tradition which includes this specific type of flap on the fore edge), cloth doublures, the use of notches, and similar fastening systems. An important difference between the two, however, is the use of an unsupported sewing structure in Georgian manuscripts. Unsupported sewing is common in books made in a variety of Near Eastern cultures, as has been previously described. The relationship between Armenian and Georgian bookbinding would be a very interesting study to undertake, especially in view of the close and often intermingled association between the two cultures throughout history.

The historical, political, and cultural connections between Armenia and Georgia are much too complex to be explained here in any detail,[67] other than to state generally that these two adjacent nations were often subjected to the same difficulties and adversities over

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[67]For more information on the history of Georgia, see: David Marshall Lang, The Georgians (New York: Praeger Publishers, 1966), 72-118; Ronald Grigor Suny, The Making of the Georgian Nation (Bloomington, Ind.: Indiana University Press, 1988), esp. pp. 3-59; and Cyril Toumanoff, "Armenian and Georgia," in Cambridge Medieval History, Vol. 4, pt. 1, ed. by J. M. Hussey, 593-637 (Cambridge: University Press, 1966).

the centuries caused by conflicts between the neighboring empires (Roman, Byzantine, Persian, etc.) and by foreign incursions (Arab, Turkish, Mongol). The borders changed frequently as a result of these struggles, with Armenia and Georgia often serving as buffer states between more powerful empires. The Armenian and Georgian nations were also frequently connected through intermarriage between the nobility, and at times the ruling nobles were actually just different branches of the same family.[68]

However, these two societies were allied not only in the political sphere, but also through religion and culture. Both nations converted to Christianity in the early 4th century (Armenia in approximately 314, and Georgia about 20 years later), and were in agreement on key theological issues arising from the controversial Council of Chalcedon (AD 451) until the late 6th-early 7th century, when Georgia finally broke its ties with the Monophysite Armenian church and allied itself to the Diophysite beliefs of Byzantium.[69]

Although the Armenian and Georgian languages are completely different and are of unrelated origins (Armenian being an Indo-European tongue, as is Greek, while Georgian is Caucasian), the need for an alphabet was

[68]Cyril Toumanoff, "Armenian and Georgia," in Cambridge Medieval History, 593-637.

[69]Suny, 27.

felt at about the same time, and for the same reasons. Koriwn states in his biography of the cleric Maštoc', that in addition to creating the Armenian alphabet, Maštoc' also developed one for the Georgians and the Caucasian Albanians (a people and language who later became extinct as a distinct nation, probably by the 11th century).[70] This version of the origin of the Georgian alphabet is disputed by most Georgian scholars, and the controversy has not yet been resolved.[71] Literary works were then translated into Georgian from Armenian, Greek and Syriac.[72] For example, the Gospels and Psalms of David were translated into Georgian from the Armenian versions of these Biblical works.[73] It is also known that thirteen Syrian Fathers came to the Caucasus between the 5th and 6th centuries, bringing with them the rules of Syrian monasticism.[74] Georgian literature and historical works were also translated into Armenian, such as the famous

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[70]Koriun, The Life of Mashtots, Norehad transl., 37 and 40; Lang, 18.

[71]Suny, 22-23.

[72]Lang, 154, 156-157. See also G. Deeters, "Georgische Literatur," Handbuch der Orientalistik (Armenisch und Kaukasische Sprachen), ed. B. Spuler. (Leiden: Brill, 1963), 129-155.

[73]Lang, 154.

[74]Lang, 156-157. The Lives of the Syrian Fathers was compiled in the 10th century, however.

Georgian chronicles (K'art'lis Ts'khovreba).[75] Clearly, the Georgians were exposed to Armenian, Syriac, and Greek books through the centuries (and vice versa), and it is logical that there should be at least some ties between the bookmaking traditions of not only the Armenians and Georgians, but also with the Greeks and Syrians.

[75]Thomson, "The Armenian Version of the Georgian Chronicles," 81-90.

Chapter 5

A Comparison Between Armenian and Islamic Bookbinding Techniques

Introduction

This chapter will compare Armenian binding structure with that of the Islamic world. The material has been gathered from the available published material, and from data collected by the direct examination of several manuscripts. As before, I will concentrate on structure and technique rather than decoration.

Islamic Binding

As in the majority of other cases, most of the published material on Islamic bindings consisted until recently of studies of the decoration and tooling used on these books.[1] However, one study concerned with the

[1]For a bibliography of publications on the topic up to 1957, see Emil Gratzl et al., "Bibliographie der Islamischen Einbandkunst, 1871-1956," Ars Orientalis 2 (1957): 519-540. There have also been a number of exhibition catalogues published recently which include many Islamic bindings; the most notable will be cited here: Duncan Haldane, Islamic Bookbindings in the Victoria and Albert Museum, (London: World of Islam Festival Trust, 1983); Glenn D. Lowry and Milo C. Beach, An Annotated and Illustrated Checklist of the Vever Collection, (Washington, D.C.: Smithsonian Institution, 1988); David James, Qurans and Bindings from the Chester Beatty Library, (London?: World of Islam Festival Trust, 1983).

structure of these books has now been published as a chapter in an exhibition catalogue, printed in conjunction with an exhibition of Islamic bindings held at the University of Chicago in 1981.[2] The chapter on structure from this publication is based in part on translations of two early Islamic bookbinding manuals, the earlier one dating from the 11th century by Tamim ibn al Mu'izz ibn Bâdîs, a sovereign of Ifriqiya, Tunisia who apparently had learned the craft of bookbinding (hereafter "Ibn Badis"),[3] and the second written in Fez in AD 1619 by Abū al-'Abbās Aḥmad ibn Muḥammad al-Sufyānī (hereafter "al-Sufyani"),

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[2]Gulnar Bosch, John Carswell, and Guy Petherbridge, Islamic Bindings and Bookmaking (A Catalogue of an Exhibition, The Oriental Institute, The University of Chicago May 18-Aug. 18, 1981), (Chicago: The University of Chicago, 1981), hereafter cited as Bosch et al. The relevant chapter, titled "The Materials, Techniques and Structures of Islamic Bookmaking," was written by G. Bosch and G. Petherbridge.

[3]G. Bosch, et al., 9. Bosch published a translation of a portion of the chapter on the technical aspects of bookbinding by Ibn Badis in: "The Staff of the Scribes and the Implements of the Discerning: An Excerpt," Ars Orientalis IV (1961): 1-13. Martin Levey published a translation of Ibn Badis's entire work in: "Medieval Arabic Bookmaking & Its Relation to Early Chemistry and Pharmacology," Transactions of the American Philosophical Society 54/4 (1962): 3-79. Bosch and Levey occasionally differ in interpretation of some passages. Note that the original 11th century manuscript (in the Egyptian Library, Cairo) was not used for either of the translations. The main manuscript used was a 1908 copy made from the original and now located in the Oriental Institute, University of Chicago (Ms. A12060). A 17th century variant, again from the Oriental Institute, was also used (Ms. A29809). Levey (1962), 6-7; Bosch et al., 2 and 15, notes 30-31.

who must have been a practicing bookbinder based on his detailed knowledge of the craft as shown by the insight which he provides into certain "secrets" of the trade.[4] Both these manuals give detailed information on how to bind books, what tools and materials should be used, how to prepare the necessary materials, etc. The information to be presented here will be derived primarily from the Chicago exhibition catalogue and the English translations of the two bookbinding manuals, but as will become evident, the characteristics discussed here are common for the majority of Islamic bindings from about the 11th/12th to 17th centuries AD, in most parts of the Middle East.

Most extant Islamic manuscripts are in codex form, although scrolls also exist.[5] The Arabs were probably

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[4]Levey has also translated al-Sufyani's treatise in the article cited above ("Medieval Arabic Bookmaking..."). He did not use the original manuscript of 1619, however, but the 2nd edition of the published version (in Arabic), which was based on an 1839 copy of the 1619 manuscript: Abou el-`Abbas Ahmed ben Mohammed Es-Sofiani, Art de la Reliure et de la Dorure, P. Ricard, ed., Fez, 1919; 2nd ed., Paris, 1925. The Ricard publication includes an introduction in French, and a glossary of technical terms, but the text itself is in Arabic, and was not translated into French.

[5]T.W. Arnold and A. Grohmann, The Islamic Book: A Contribution to its Art and History from the VII-XVIII Century, ([Paris?]: Pegasus Press [New York, Harcourt, Brace and Co.], 1929), pp. 26-30. Early Arabic block-printed scrolls are discussed in : Richard W. Bulliet, "Medieval Arabic Tarsh: A Forgotten Chapter in the History of Printing," Journal of the American Oriental Society 107, no. 3 (July-Sept. 1987): 427-438; and Idem, "Printing in the Medieval Islamic Underworld," Columbia Library Columns 36, no. 3 (May 1987): 13-20.

introduced to the codex form of the book through the Ethiopians; indeed, the word for a codex book in Arabic (mushaf or mishaf) is borrowed from the Ethiopic.[6] The books were generally made with a vertical format (meaning that the height of the book is greater than its width), although it appears that many earlier books (c. 8th or 9th to 11th centuries) were of a horizontal format.[7] The text block was more often made of paper, especially after the mid-tenth century,[8] but a few papyrus manuscripts are also known, as are parchment.[9] The paper leaves were sized, a process by which the sheets of paper were immersed in, or perhaps coated with, a special solution so that the ink would not penetrate or "bleed" into the sheets. This was generally done with a some type of starch mixed with water, either a wheat-based starch (called nashā') or perhaps a rice starch.[10] The treatise by Ibn Badis

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[6]Arnold and Grohmann, 30 and 44.

[7]Georges Marçais and Louis Poinssot, Objets Kairouanais: IXe au XIIIe Siècle. Reliures, Verreries, Cuivres et Bronzes, Bijoux (Tunis, Vol. 1, 1948), 13; Bosch et al., 25; Theodore C. Petersen, "Early Islamic Bookbindings and Their Coptic Relations," Ars Orientalis 1 (1954): 61; Arnold and Grohmann, 56-57.

[8]Johannes Pedersen, The Arabic Book, trans. Geoffrey French (Princeton, N.J.: Princeton University Press, 1984), 62-63.

[9]Bosch et al., 24-25.

[10]Bosch et al., 35-37; Levey (1962), 39-40. Nashā' was also used as paste (presumably when made with a thicker consistency).

describes sizing with a cooked solution of rice starch and water.[11] The leaves would then have been burnished, a process done by means of a smooth stone, glass, or shell. This polishing procedure smoothed out the paper, giving a smooth surface upon which to write or paint.[12] The polished paper would have been folded into gatherings. At this point the leaves would have been ruled to aid the scribe in writing. The most common technique used in the Islamic world for this procedure was to use a ruling frame or mastara, a wooden or pasteboard board in which parallel wires or thick threads were strung. The paper would then be placed over this ruling-board and pressed, probably by rubbing a hand or finger over the strings, leaving it with raised indentations to be used as ruling lines by the scribe.[13] The text could now be written on the folded

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[11]Bosch et al., 35; Levey (1962), 40.

[12]Bosch et al., 35-37; Janet G. Snyder, "Study of the Paper of Selected Paintings from the Vever Collection," in An Annotated and Illustrated Checklist of the Vever Collection, ed. G. D. Lowry and M. C. Beach (Washington, D.C.: Smithsonian Institution, 1988), 433. On page 439 are photomacrographs of both burnished and unburnished paper. For a photograph of a 19th century Persian agate burnisher, see: Duncan Haldane, Islamic Bookbindings in the Victoria and Albert Museum, (London: World of Islam Festival Trust, 1983), 17. Paper polishing is also mentioned by Qāḍī Aḥmad in his Calligraphers and Painters: A Treatise by Qāḍī Aḥmad, son of Mīr-Munshī (circa A.H. 1015/A.D. 1606), trans. by V. Minorsky. Freer Gallery of Art Occasional Papers, Vol. 3, no. 2 (Washington, D.C.: Smithsonian Institution, 1959), 114.

[13]Bosch et al., 41. The ruling frame was also used in ruling Hebrew manuscripts, and is still used in modern

leaves, using the ruled lines as a guide. After the writing was dry, if desired, the scribe could rub his fingers over the raised indentations, making the ruling lines disappear.[14]

After the text was written, the quires would have to be assembled and sewn together to form the text block. The type of sewing most commonly used was a link-stitch unsupported sewing.[15] It was also common to use only two sewing stations, regardless of the size or weight of the book, and the sewing thread was usually silk or a thin linen, which was often too weak to support the book and would therefore frequently break.[16] There is no mention of using notches at the sewing stations. It seems that the quires were pierced only at the moment of sewing. Ibn Badis stated that the needle usually pierced the quire in only two places,[17] while al-Sufyani explained that one

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times by Samaritan scribes. See: Malachi Beit-Arié, Hebrew Codicology: Tentative Typology of Technical Practices Employed in Hebrew Dated Manuscripts, (Jerusalem: The Israel Academy of Sciences and Humanities, 1981), 78-86; Michèle Dukan, La Réglure des Manuscrits Hébreux au Moyen Age, (Paris: Centre National de la Recherche Scientifique, 1988), 16.

[14]Angelo M. Piemontese, "Arte Persiana del Libro e Scrittura Araba," Scrittura e Civiltà 4 (1980): 126.

[15]Bosch et al., 46. See Appendix 4, "Glossary of Technical Terms."

[16]Ibid.

[17]Idem, 47.

should make an ink mark where one wants to position the sewing stations and introduce the needle with the thread at those points when sewing.[18] Their explanations also imply that only one needle should be used.[19] Ibn Badis also maintained that a coarse thread should not be used because then the spine of the book would become too bulky when tightened in the press (i.e., it would cause too much swelling at the fold), and the coarse strings would leave a ridged impression in the fold.[20] Al-Sufyani also describes knocking down the spine folds with a mallet before placing the text block in the press in order to minimize the normal slight swelling which occurs when sewing a text block, a procedure which he regards as one of the important secrets of bookbinding.[21]

The next step would be to line the spine. It might be lined with a piece of fabric, usually an unbleached or semi-bleached linen tabby.[22] However, Ibn Badis describes the use of paper hinges pasted onto the spine,[23] and al-

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[18]Bosch et al., 48; Levey (1962), 52.

[19]Bosch et al., 47-48. Levey (1962), 42, 52.

[20]Bosch et al., 47; Levey (1962), 42.

[21]Bosch et al., 47-48; however, the author has been wrongly identified in this passage as Ibn Badis instead of al-Sufyani. See Levey (1962), 51-52.

[22]Bosch et al., 48. This information is according to Bosch and Petherbridge, and is not described by Ibn Badis in his treatise.

[23]Levey (1962), 43.

Sufyani specifies the use of pared leather hinges.[24] These hinges were apparently to be used as the board attachments in a later step, as we shall see.

After this, the binder would presumably have trimmed the edges of the text block, in order to make the edges of the text block smooth. Since the pages are made of folded sheets, it would be unlikely that the three exposed sides of the text block (the head, fore edge and tail) would be perfectly even. Trimming the text block after sewing gives an even, straight edge to the three exposed sides.[25] It is probable that this was done by placing the sewn text block in a press and trimming each edge in turn with a knife.[26] Ibn Badis's treatise is not clear about this procedure, however, and al-Sufyani barely mentions it.[27]

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[24]Idem, 52.

[25]If a binder wanted to gild the edges of the book, it would be extremely important that the edges be perfectly smooth, polished, and even, otherwise it would not be possible to burnish the gold to yield the desired shiny appearance. Bernard C. Middleton, A History of English Craft Bookbinding Technique, 2nd ed. (London: The Holland Press, 1978), 93-94. It is generally accepted that gold-tooling and edge-gilding were introduced in Europe by Middle Eastern bookbinders (Ibid.), and al-Sufyani mentions books with leaves of gilt edges. Levey (1962), 52.

[26]Bosch et al., 51-52. Page 52, figure 8 reproduces an illustration from a Mughal manuscript (dated 1600-1610 AD) of a bookbinder trimming the edges of a book with a file. (Freer Gallery of Art, Ms. 54.116).

[27]The section where Ibn Badis describes trimming is discussed after long explanations of dying and treating leather, and begins with "when the leather is dry, it is

The endbands were most likely embroidered next. They could not have been worked before the edges were trimmed, otherwise they would have been cut off during the trimming process. The unraised type of endband which we now associate with Islamic bindings seems to have been used since approximately the 14th century, and it is still used today by traditional Islamic binders.[28] The primary sewing was usually made around either a cord core or a leather thong, with the leather thong more common. This thong or cord would protect the edge of the book near the spine from the primary sewing threads, which otherwise would cut into the spine folds and tear the paper at that point. The primary sewing was done through the center of each quire (and was not attached to the boards as in Armenian or Greek binding), and the decorative, secondary sewing was done using this primary sewing and thong or core as a kind of warp. The decorative embroidery was usually made with two colors of silk thread, and was woven around the

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necessary that the book be trimmed..." (Bosch et al., 52-53 and Levey (1962), 45). It seems to imply that the book should be trimmed after the leather was already attached to the covers (and the covers were attached to the text block?), which of course would be impossible. Perhaps he means one should measure the text block for trimming after the covers have been made but not yet actually attached. There may be a problem either with the translation or the manuscript used for the translation. Al-Sufyani states only that one should measure two cover boards for the book after one has trimmed the edges with "cutters". See Levey (1962), 52.

[28]Bosch et al., 53.

threads of the primary sewing. The finished design resulted in a multiple chevron pattern.[29] According to Bosch et al., however, it was not unusual to eliminate the primary core, with the result that the primary sewing was done without a protective piece below it. In such cases, after the embroidery was woven over the primary sewing (the "warp"), the spine folds would consequently often get torn and subsequently have to be repaired with small patches of paper.[30]

The next step would have been to make the boards to be used as covers and then to attach them to the prepared text block. It appears that the covers for the sewn book were prepared separately and attached to the text block at the spine by the use of paste only and hinges previously pasted on the spine of the text block. It is also probable that the boards were covered with leather and tooled before attaching them to the text block.[31]

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[29]Idem, 53-55; Deborah M. Evetts, "Traditional Islamic Chevron Headband," Guild of Book Workers Journal 19 (1980-1981): 30-35; Les tranchefiles brodées-étude historique et technique (Paris: Bibliothèque Nationale, 1989), 86-89; Jane Greenfield and Jenny Hille, Headbands: How to Work Them (New Haven, CT: Edgewood Publishers, 1986), 65-69. Al-Sufyani also describes working the endband, although he does not sufficiently explain the weaving process for us to be able to reproduce it according to his directions. Levey (1962), 53.

[30]Bosch et al., 53-55.

[31]Idem, 55-56.

The boards were usually made of pasteboard (layers of paper or papyrus pasted together). Al-Sufyani gives detailed directions on how to make these pasteboards from layers of paper.[32] Some early bindings have been found with wooden boards,[33] and tradition says that the Qur'ān was originally placed between two wooden boards (although the Quranic text placed between the two boards was not necessarily a sewn text block--it may have been composed of loose, unsewn sheets or folded leaves).[34] There are no squares, and the text block is therefore the same size as the boards. The boards were cut to the same size as the previously sewn text block.[35]

A distinctive characteristic of Islamic bindings is the existence of a special fore-edge flap, or lisān in Arabic. This flap is attached to the lower board and is actually made of two parts: a smaller rectangular piece the height and width of the fore edge, and a pentagonal piece which reaches over and covers about one third to one half of the upper board. The effect resembles the flap of

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[32]Levey (1962), 51.

[33]Marçais and Poinssot, 16.

[34]Arnold and Grohmann, 30, 33-34, and 44-46.

[35]Levey (1962), 52.

an envelope.[36] This flap was also constructed of pieces of cut pasteboard.[37]

Examination of the large number of detached covers from Islamic manuscripts has indicated that the covers must have been prepared separately and even covered with leather and tooled before being attached to the sewn text block.[38] The idea is similar to modern case bindings. The type of fore-edge flap described above became a traditional feature of Islamic books, and it may have become easier to construct the covers separately because of this flap. The pieces of the fore-edge flap would probably have been cut to size and placed flat on the piece of leather which was to be used to cover the boards. The leather would have been turned-in over the boards and fore-edge pieces, and the interior of the entire piece was probably lined with some type of a doublure at this point (see below). The board attachment consisted of the previously made hinges (cloth, paper, or leather) which had been pasted to the spine. They were now smeared with

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[36]Bosch et al., 55-56.

[37]Al-Sufyani describes how to cut the pieces of pasteboard in order to make the fore-edge flap; see Levey (1962), 53.

[38]The making of the cases may even have been a separate craft; Al-Maqrīzī, the 14th century Arabic historian, states that the case-makers (sandūq) worked near the booksellers and papermakers (Khiṭaṭ, II, p. 102, 22). Arnold and Grohmann, p. 108, note 141.

adhesive and attached to the "case binding" at the several places parallel to the spine.[39] Ibn Badis mentions that sometimes "strengtheners" were added at the joint. These were additional pieces of paper, cut the height of the book and a few fingers wide on each side which would have been pasted at the inner joint as an extra attachment between board and text block.[40] Pastedowns can sometimes be found, and they are described by Ibn Badis as a way of giving extra strength to the attachment of the boards to the text block.[41] However, it seems that they were less commonly used than cloth or leather doublures to line the inside of the boards.[42]

The board attachment, therefore, is accomplished simply by the use of adhesive on some type of hinge, which had previously been attached to the spine of the text block with adhesive. This would not be an extremely strong attachment, and indeed, it is quite common that the bindings of Islamic books be detached from the text block and found separately. Many discarded bindings have been found in this state, such as the bindings discovered in a

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[39]Bosch et al., 56.

[40]Bosch et al., 49; Levey (1962), 43.

[41]Bosch et al., 47; Levey (1962), 42.

[42]Bosch et al., 50.

storeroom/pigeon-house at the Great Mosque in Qairouan, Tunisia, in the 1940's.[43]

The available published information implies that the boards were completely prepared before attachment, including covering them with tanned leather and perhaps even decorating them. The leather most commonly found is goatskin, although sheepskin was also used.[44] The insides of the boards were often lined, frequently with leather doublures, although parchment, textiles, and even paper doublures in later manuscripts have been found.[45] It is possible that even the doublures were pasted into the covers before they were attached to the sewn text block. These doublures may have sometimes been made of a single piece of leather covering the entire inside covers, and the part which would have covered the spine area may have been cut in half to form additional leather hinges which would have been adhered to the first and last pages of the text block.[46]

As stated previously, it will not be possible to discuss the decoration of these bindings in any detail

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[43]Marçais and Poinssot, 11. The various bindings have been dated by the authors to be from the 9th to 13th centuries.

[44]Bosch et al., 65.

[45]Ibid.

[46]Idem, 64.

here, except to mention briefly what general types can be found. Many bindings were blind-tooled. Gold-tooling was also used, and it has long been accepted that the art of gold-tooling in Europe was introduced by Middle Eastern bookbinders through Italy in the late 15th century.[47] Other methods of decoration, such as using sewn leather appliqué work, repoussé work, filigree, punching, etc. have been described in the literature.[48] Embellishing the covers by the technique of painted lacquer was used in Middle Eastern bindings since at least the 15th century,[49] and the technique may have been known as early as the 13th or 14th century.[50] Thus far, I have found only one

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[47]Anthony Hobson, Humanists and Bookbinders (New York: Cambridge University Press, 1989), 57-58.

[48]Arnold and Grohmann, 34-44; Bosch et al., 69-70.

[49]Mehmet Aga-Oglu, Persian Bookbindings of the Fifteenth Century (Ann Arbor: University of Michigan Press, 1935), plate X.

[50]Oliver Watson, "An Islamic 'Lacquered' Dish," in Lacquerwork in Asia and Beyond, A Colloquy held 22-24 June 1981, ed. William Watson. [Colloquies on Art & Archaeology in Asia No. 11]. University of London, Percival David Foundation of Chinese Art, School of Oriental and African Studies (London: Percival David Foundation, 1982), 238; and G. Fehérvari, "Near Eastern Lacquerwork: History and Early Evidence," in Lacquerwork in Asia and Beyond (cited above), 228. The Watson article examines and describes in detail the two techniques used in the Middle East for lacquering objects, and convincingly explains that, contrary to what has been repeated in the literature, these techniques are completely different from those used in the Far East, and therefore could not have developed through contacts with China, Japan, etc. Lacquer bindings were especially popular in Iran during the Safavid period and later. Watson, p. 237. See also Rudolf M. Riefstahl,

Armenian manuscript which may have been made with lacquer covers, a Gospel whose text is dated 1609 from Isfahan (San Lazzaro Ms. 1594).[51] The leather-covered wooden boards (not pasteboard as in the Islamic examples) were coated with a raised opaque yellow substance which appears to be gesso covered with lacquer, decorated by a raised cross design and arabesques. Interestingly, the structure of this book is entirely Armenian. The binder has experimented here not with Islamic bookmaking structure, but only with a new (to him) decorative technique, adapted to a Christian holy book.[52]

"A Seljuq Koran Stand with Lacquer-Painted Decoration in the Museum of Konya," Art Bulletin 15 (1933): 361-373.

[51]The 14th century Glajor gospels at UCLA (Ms. 1) had lacquer covers, but these are Persian-made and were probably added in 1824-25. Thomas F. Mathews and Avedis K. Sanjian, Armenian Gospel Iconography: The Tradition of the Glajor Gospel, (Washington D.C.: Dumbarton Oaks, 1991), 33.

[52]The technique was apparently not commonly used by Armenian binders in Isfahan, since this is the only Armenian lacquer binding I have thus far seen out of the almost 250 manuscripts examined during the course of this research (other than the covers of the Glajor Gospels mentioned above, which are Persian-made). However, the Victorian and Albert Museum has a Persian lacquer binding in its collection depicting a Virgin and Child in its central medallion, which must have originally been made for a Christian book, probably by a Persian craftsman. See D. Haldane, Islamic Bookbindings in the Victoria and Albert Museum, plate 128. I am not aware of any published work mentioning lacquer covers found on an Armenian manuscript.

Discussion

On the basis of the characteristics noted, a few similarities can be found between Armenian and Islamic bindings. The most obvious is of course, that they are codex books and therefore have the same basic characteristics inherent in all such books, although scrolls also exist in both traditions. Most Armenian codices are also constructed using the vertical format.[53] The paper used in Armenian manuscripts is also often polished and sized. At least some Armenian manuscripts have been found to be ruled by the use of a mastara.[54] An interesting similarity found in the books of both cultures is the use of a fore-edge flap attached to the lower board, although the flaps themselves are quite different in structure. The Armenian flap covers only the fore edge and is made only of leather and a cloth lining, with no pasteboard or wood as a core. The Islamic flap reaches

[53]Thus far I have seen only one Armenian manuscript made with a predominantly horizontal format, UCLA Ms. 33, a Calendar of Feasts (tōnac'oyc') dated AD 1460-61.

[54]For example, San Lazzaro Ms. 1571, a Ritual from Nor Erevan (a neighborhood of New Julfa, Isfahan), written between AD 1704 and 1709. For further information on this manuscript see: Sylvie L. Merian, "From Venice to Isfahan and Back: The Making of an Armenian Manuscript in Early 18th Century Persia," in The Compleat Binder: Studies in Book Making and Conservation in Honour of Roger Powell, ed. by G. Petherbridge. In press. See Chapter 2 for further examples and discussion on the use of a ruling frame in the Armenian bookmaking tradition.

over the upper board with a pentagonal piece, and has a pasteboard base below the leather.[55]

However, in the main topic of this study, the structure, the two traditions are quite different. Islamic books use an unsupported sewing structure, as opposed to a supported one in Armenian bindings. The technique of working the endbands is quite dissimilar. The Armenian endbands are tied down into the boards and are raised, while the Islamic ones are not. The use of a type of hinge pasted to the spine as the board attachment is completely different from the type used in Armenian bookmaking, which would be expected in view of the unlike sewing structures. The technique of making and completing the covers separately from the binding is very different from the Armenian technique. Separately made covers would also preclude the possibility of making the bindings with raised endbands, since raised endbands are attached to the boards themselves. Another difference is that the Islamic bookmakers do not use notches at the folds in the quires at the sewing stations.[56]

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[55]Although the flaps are different, the concept of using a flap in both Armenian and Islamic bookbindings may derive from the Coptic bookmaking tradition. Petersen, "Early Islamic Bookbindings and their Coptic Relations," 42, 44-46, 56 note 16; Jean Doresse, "Les reliures des manuscrits gnostiques coptes découverts à Khénoboskion," Revue d'Égyptologie XIII (1961): 27-49.

[56]As discussed in Chapter 3, notching was also used by Greek binders. We know that Ibn Badis had at least seen Byzantine bookbindings, because he mentions twice some

The differences in certain materials used can also have an effect on the techniques used. For example, if thick wooden boards had been consistently used in Islamic bindings, it would not be possible to attach the boards to the text block by the use of potentially flimsy paper hinges pasted to the spine.

The structure of Islamic bindings indicates that they may have been made more hastily. They used a type of case binding method, and the work seems to have even been very clearly divided into (1) binding the book (presumably sewing the text block) and (2) making the cases (the covers).[57] The separate step of notching the quires is not included; indeed, al-Sufyani recommends only making an ink mark at the sewing station, and Ibn Badis suggest using only two sewing stations, and implies that the binder should prick the hole in the fold just at the moment of sewing.

Bookmaking in the Islamic world was very different from bookmaking in Armenian areas; in the Armenian

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aspects of Greek bookmaking in his treatise. He describes a type of book press, called khliun by the Greeks [Levey (1962), 41] and in his description of sewing, states that the Greeks work with two needles or three, but he cannot describe it nor approve of it [Levey (1962), 42]. It is not clear what he means by working with two or three needles, because according to the presently available published material, the Byzantines used one needle sewing. This statement should perhaps be further investigated, including an examination of the translation.

[57]See note 38 above.

tradition, it was primarily a monastic endeavor.[58] As many Armenian monasteries were located in rather isolated areas, and for centuries the literate class was primarily composed of clergymen, it is not surprising that the tradition should have remained so conservative. By contrast, in the Islamic world, the tasks related to bookmaking (including selling the necessary materials such as paper, binding, copying, transcribing, or ordering a specific book to be copied) were commonly carried out in cities in shops found in certain quarters of the bazaar.[59] Each shop or bookstall was overseen by a warrāq, "a man who made a profession of transcribing," but who also sold books.[60] There was a great market for books for the literate class, and bookmaking seems to have been much more of a business endeavor rather than a secluded monastic activity. If the Islamic literate class was indeed much larger than the Armenian literate class, it might explain the developments which occured in the technique of Islamic bookmaking. Dividing the labor and developing specialized shops to buy the supplies (or hire someone to do the work), probably enabled books to be made

[58]Avedis Sanjian, A Catalog of Medieval Armenian Manuscripts in the United States. Vol. 16: Near Eastern Studies, (Los Angeles: University of California Publications), 1976, 2.

[59]Pedersen, 51-53.

[60]Ibid., 43, 49.

quicker and more cheaply, resulting in a larger and less expensive supply of this commodity. Even the development of a tool such as a mastara (ruling frame), is clearly something which was invented because it enabled one to rule lines on paper or parchment more quickly (two sides at once), especially when compared to the labor-intensive work of pricking the edges of a leaf and then connecting each pair of pricks one by one with a straight edge to form a ruled line. Not all Armenian manuscripts were produced solely for the use of religious, however. Especially in the 16th-17th centuries, at least some Armenian scribes (usually priests) occasionally produced manuscripts on speculation, leaving blank spaces in the colophons so that the name of the future owner could be inserted after the book was bought.[61]

In contrast to Armenian, Greek, and Syrian bookbinders, all Christian clergymen who might have occasion to interact with each other, there was probably not as much contact between Armenian bookmakers (usually priests or monks in a monastery) and Islamic bookmakers (scribes and craftsmen found in city markets). Additionally, it should be noted that it would have been extremely unlikely that a Christian, Muslim, or Jew would

[61]For example, British Library Ms. Or 5088, a Hymnal dated AD 1507 copied in Van (Varak Monastery). See also: Avedis Sanjian, Colophons of Armenian Manuscripts 1301-1480, (Cambridge: Harvard University Press, 1969), 10.

ever give a book, especially any type of religious book, to be bound by someone other than a member of his own faith, for fear of the "infidel" somehow profaning that sacred book.[62] For example, Pope Benedict XIII in AD 1415 pronounced an edict prohibiting Jews from binding the books of Christians which had the name of Jesus or the Virgin Mary included in its text.[63] In view of the fact that Islamic books are distinctly recognizable by their bindings, it also seems unlikely that a Christian cleric, whether Armenian, Greek, or Syrian, would ever want to bind an object as sacred as a Christian holy book in such an obviously "Islamic" manner.

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[62]Bosch et al., 5, notes 71 and 72; S. Assaf, Be'ohale Ya'akov, (Jerusalem, 1943), 25. (I would like to thank Prof. S. Peter Cowe for translating the relevant passages in this book for me). In the present study, only two Armenian manuscripts were found to be bound in an Islamic binding (UCLA Ms. 73, and NYPL Spencer Collection Armenian Ms. 5). Not surprisingly, neither of these manuscripts were religious texts. The UCLA manuscript is a book of Geomancy dated 1625 and written in Aleppo, and the NYPL book is the story "The Jewish Bride", written in Armeno-Turkish in Constantinople in the 18th-19th century.

[63]Assaf, 25; Bosch et al., 5.

Chapter 6

Conclusions

Armenian bookbinding has proven to have a number of distinguishing characteristics, some of which are not found in the binding traditions of other cultures. The quires were notched in a variety of ways which recessed the sewing, the covers were made of thin wooden boards with a horizontal grain, and the spine of the sewn text block was lined with a single layer of cloth.[1] A unique method of board attachment was developed, and a form of supported sewing on cords was used, which is exceptional for this part of the world and will be discussed further below. The endbands were raised and embroidered with a distinctive form of secondary sewing, the inside boards were lined with cloth, an unusual type of fore-edge flap was used, the edges of the text block were often colored red with a horseshoe shape around the endbands, and the spine leather was often ruled with parallel vertical lines. These characteristics are found with great consistency in the majority of bindings examined, regardless of date or place of execution.

[1]A single layer of cloth lining the spine is also found in other binding traditions.

When I began this research, I expected to find more differences in structure related to the time and place that the book was bound. Instead, I discovered that the structural techniques remain relatively unchanged for more than four centuries, no matter where or when the books were bound. A 14th century Armenian binding is no different structurally from an early 18th century Armenian binding.[2] Armenian bookmaking, which we know was primarily a monastic activity, was even more conservative than I had first suspected.

Comparison of Armenian bookmaking characteristics and techniques with those of neighboring cultures also yielded some interesting information. Few similarities were found between Armenian and Islamic bookbinding structures. Besides the usual affinities found in most codex books, the only notable resemblance was the use of a fore-edge flap in both traditions. These fore-edge flaps are still quite different structurally. There was, however, one important part of the bookmaking process in which there seemed to be a clear relationship, and that was in the preparation of paper. In both traditions the paper was sized with starch, was polished before it was written on, and ruling boards for marking lines were used; ruling

[2]In the future it may be possible, with further study, to perhaps distinguish them by tooling decoration.

boards were used at least occasionally by Armenians.[3] It is not yet clear whether Armenians manufactured their own paper before the 17th century,[4] but it is known from numerous colophons that they often bought paper from Islamic paper production centers, such as Tabriz or Damascus.[5] Imported European paper was also bought.[6]

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[3]Note that Armenians also used ruling boards to rule parchment leaves, as mentioned in Chapter 2.

[4]The Armenian priests who developed the printing press in the Cathedral of All Saviours in New Julfa (Isfahan) in 1636 stated in a colophon in one of their first attempts at printing (a 1641 printed version of the Lives of the Fathers, Haranc' Vark') that they made their own paper; however, their lack of papermaking experience produced a paper of low quality. I examined two copies of this printed book (San Lazzaro Ms. 1527 and a copy belonging to Eton College in England), and my notes describe the paper as being very lumpy, fibrous, and "spongy-looking." Both books were bound in traditional Armenian bindings. The colophon and a French translation are published in: Raymond H. Kevorkian, Catalogue des "Incunables" Arméniens (1511/1695) ou Chronique de l'Imprimerie Arménienne (Geneva, 1986), 116. See also: Paul Quarrie, Treasures of Eton College Library: 550 Years of Collecting (New York, NY: Pierpont Morgan Library, 1990), 77. I was not able to consult H. Abrahamyan, "T'ułt'i gorcaran Hayastanum," [Paper Factories in Armenia], in Matenadarani Gitakan Nyut'eri Žoġovacu, 1: 61-72, which should give further details on papermaking in Armenia.

[5]A. G. Abrahamyan, Hayoc' Gir ev Grč'ut'yun [Letters and Writing of the Armenians] (Erevan: Erevan University Publishers, 1973), 282; Avedis Sanjian, Colophons of Armenian Manuscripts 1301-1480 (Cambridge: Harvard University Press, 1969), 11.

[6]The paper of many of the manuscripts which I examined were watermarked, indicating European origin. For an analysis of the origin of the watermarked paper of San Lazzaro Ms. 1571, see: Sylvie L. Merian, "From Venice to Isfahan and Back: The Making of an Armenian Manuscript in Early 18th Century Persia," in The Compleat Binder:

It should not be surprising that there should be a rapport in the preparation of paper between the two cultures, since it was through the Arabs that Armenians must have been introduced to paper. According to tradition, paper was invented AD 105 in China,[7] and was brought westward by Arabs who learned the secrets of the craft from Chinese prisoners of war taken in Central Asia during the 8th century, some of whom were papermakers.[8] Note that the earliest known dated Armenian paper manuscript was copied in AD 981, although paper does not really begin to replace parchment in Armenia until the 12th-13th century.[9] Paper was not produced in Europe, however, until the 12th or 13th century.[10]

Why is there not more of a relationship between Armenian and Islamic bookbinding practices? Even though Armenian and Muslim communities often lived physically very near each other, they probably still remained very

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Studies in Book Making and Conservation in Honour of Roger Powell, ed. by Guy Petherbridge (in press).

[7]Dard Hunter, Papermaking-The History and Technique of an Ancient Craft, 2nd ed. (New York: Alfred A. Knopf, Inc., 1947; republished New York: Dover Publications, 1978), 48-53.

[8]Johannes Pedersen, The Arabic Book, transl. Geoffrey French (Princeton, N.J.: Princeton University Press, 1984), 60-61.

[9]This manuscript is located in the Matenadaran (Ms. 2679). A. Abrahamyan, Hayoc' Gir ev Grč'ut'yun, 282.

[10]Hunter, 60. Pedersen, 64.

separate, especially in rural areas and small villages. Only in large cities might there be any significant form of social interaction between the two. The important religious division between Christian Armenian communities and Muslims would certainly not encourage close interchange, and there was probably a certain amount of mistrust between the two groups in regards to allowing a member of the "other" group to use or handle any of their sacred books.[11] The fact that Armenian bookmaking was a predominantly secluded monastic activity, while Islamic bookmaking seems to have been more of a lay business endeavor occurring in large city centers, further reinforces the idea of a lack of interaction between those Armenians and Muslims engaged in the enterprise of book production and the bookbinding craft.

By contrast, a number of similarities were seen among Armenian, Greek, Syriac, and Georgian binding techniques.[12] In view of the historical background of the origin of the Armenian alphabet in the 5th century AD, and the definite

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[11]See Chapter 5, notes 62 and 63.

[12]It would be very interesting to study Hebrew bookbinding practices, but unfortunately there does not seem to be any published information on this topic. For other codicological information on Hebrew manuscripts, see: Malachi Beit-Arié, Hebrew Codicology: Tentative Typology of Technical Practices Employed in Hebrew Dated Manuscripts (Jerusalem: Israel Academy of Sciences and Humanities, 1981), and Michèle Dukan, La Réglure des Manuscrits Hébreux au Moyen Age (Paris: Centre National de la Recherche Scientifique, 1988).

exposure which the first Armenian scribes and translators had to Greek and Syriac books, it is logical that we should find a close relationship among the bookmaking traditions of these four Christian peoples. Further research and investigation into the bookmaking practices of the Syrians and Georgians might yield intriguing results. It would be interesting to learn if, for example, there were even closer relationships between Greek and Georgian bindings and between Armenian and Syriac bindings.[13] Both the Greek and Georgian national churches are Dyophysite, and adhere to the tenets pronounced at the AD 451 Council of Chalcedon, while the Armenians and Jacobite Syrians are both Monophysite and have rejected the teachings of the Council. It is possible that Greek and Georgian clergymen/bookbinders (and Armenian and Syrian) may have had more opportunities to interact and consequently perhaps subtly influence each other in a variety of ways, which could also include the

[13]Although these are only small details related to the bindings, we have already remarked that both the Greeks and the Georgians use similar fastening systems on their books, with pins on the board thickness at the head, fore edge, and tail. Armenian and Syriac bindings are made with exactly the same type of primary core for working their endbands, and both occasionally use metal studs to decorate the covers. (These studs were not mentioned in any of the publications on Greek bindings, and I have no information about whether this decorative feature is found in Georgian bindings).

traditional craft of bookbinding (even if it were only reflected in the decoration).

A feature common to Armenian, Greek, and Syriac bindings deserves comment here. All three of these Christian bookmaking traditions make use of a cloth spine lining on the spine of the sewn text block which also covers a portion of the boards before the leather is applied.[14] In the Vatican study of Byzantine bindings, Federici and Houlis mention one possible purpose for this feature in Byzantine manuscripts, stating that it would improve or strengthen the attachment between the boards and the text block, an attachment which may be weak due to the lack of sewing supports.[15] If this is correct, (and it would not be an illogical conclusion), why would it be used consistently in Armenian bookbinding, which is most definitely not lacking sewing supports? Perhaps its continued appearance in Armenian books, even though it is no longer serving its original purpose, betrays its origin. This cloth spine lining may be additional evidence pointing to the evolution of Armenian bookbinding from Greek and Syriac binding techniques, as a trait which

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[14]It is likely that this is also found in Georgian bindings, but I have no solid evidence for it at this time.

[15]Carlo Federici and Kostantinos Houlis, Legature Bizantine Vaticane (Rome: Fratelli Palombi Editore, 1988), 33.

remained an accepted part of the traditional Armenian book.

One important characteristic of Armenian bookbinding does not seem to have any relationship to the structures found in any other Near Eastern bookmaking traditions, and that is the use of supports in its sewing. The Armenian tradition seems to be the only one in this part of the world which used supports in the sewing of its books. These cord supports have been found in Armenian manuscripts as early as the 14th century in this study.[16] Neither Greek, Syriac, Georgian, or Islamic bindings are sewn with supports. Further away geographically, Ethiopian and Coptic manuscripts are also made with unsupported sewing structures.[17] This fact was at first perplexing, and almost illogical. Why should the Armenian bookbinding tradition be the only one to use supports in the Near East? What might have been the origin and development of this characteristic? It clearly cannot be native to the Near East nor related to Greek or Syriac

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[16]Library of Congress Armenian Ms. 4, a Gospel copied in Jerusalem in AD 1321, and Bibliothèque Nationale (Paris) Ms. Arm. 17, a Gospel from Lrim city (the Crimea), copied in AD 1356.

[17]Sydney M. Cockerell, "Ethiopian Binding," Designer Bookbinders Review 10 (Autumn 1977): 7-9; Paul Needham, Twelve Centuries of Bookbindings: 400-1600 (New York: Oxford University Press, 1979), 58; Theodore C. Petersen, "Early Islamic Bookbindings and Their Coptic Relations," Ars Orientalis 1 (1954): 52, and 43, fig. 4.

bookbinding, the two traditions which seem to be closest to the Armenian.

However, we know that supported sewing was used in Europe and is found in the earliest Carolingian bindings, starting from about the 8th century.[18] I propose that supported sewing was introduced to the Armenians by Europeans in Cilicia during the time of the Crusades. Because of Cilicia's strategic location, there was a great deal of contact with the West during this period, exemplified by political and marriage alliances, trade accords, etc. There was also much discussion of union between the Armenian church and Rome at this time. The Crusaders had an influence on a number of aspects of Armenian culture, including those related to book arts. We know that the Armenian literate class (the nobility and the clergy) were definitely in contact with and saw Latin manuscripts at this time. Scholars have already established Western influence on manuscript illumination.[19]

Additionally, a number of Latin works were translated

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[18]J. A. Szirmai, "Old Bookbinding Techniques and their Significance for Book Restoration," in IADA Preprints; 7th International Congress of Restorers of Graphic Art, 26th-30th August 1991 Uppsala/Sweden, ed. K. Jonas Palm and Mogens S. Koch, p. 3. (Uppsala?, 1991?). Berthe van Regemorter, "Evolution de la Technique de la Reliure du VIIIe au XIIe Siècle," Scriptorium 2 (1948): 275-277, 282.

[19]Helen C. Evans, "Manuscripts Illumination at the Armenian Patriarchate in Hṙomkla and the West," Ph.D. diss., New York University, 1990.

into Armenian during the 12th century by Nerses Lambronac'i, such as the Rules of St. Benedict, Papal bulls, and many others.[20] I would like to present here another possible area in which we may be able to find Western influence, namely the craft of bookmaking.

Supported sewing in Europe has been found in the earliest Carolingian bindings, starting from about the 8th century.[21] The earliest supports used were flax or hemp cords. Later, tawed leather thongs and then tanned leather thongs were used. Supported sewing was accomplished at least in some European scriptoria with the aid of a sewing frame, by at least the 12th century, as evidenced by the 12th century manuscript illumination showing a monk sewing a book on supports with the device.[22] However, supported sewing can also be accomplished without a sewing frame, as stated previously, and I have no evidence as of yet whether Armenian binders ever used sewing frames.

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[20]Gérard Dédéyan and Nicole Thierry, "Le temps de la croisade (fin XIe-fin XIVe siècle)," Histoire des Arméniens, ed. G. Dédéyan (Toulouse: Editions Privat, 1982), 326.

[21]Szirmai, "Old Bookbinding Techniques...," 3. Van Regemorter, "Evolution...," 275-277, 282.

[22]Staatsbibliothek Bamberg Ms. Msc. Patr. 5 [B. II. 5], f. 1v. See: Scriptorum Opus--Schreiber-Mönche am Werk (Weisbaden: L. Reichert, 1971), 4; van Regemorter, "Evolution...", 281 and pl. 19.

Besides the fact that Carolingian and later manuscripts were sewn on supports, a special type of board attachment was also employed and has been found in manuscripts from the 8th to 12th centuries.[23] Briefly, this so-called "Carolingian" board attachment consisted of a folded cord passed through three holes in the thick wooden boards for each sewing station, leaving a double cord upon which the signatures were sewn with a herringbone stitch.[24] The wooden board thus functioned as a base upon which to sew the rest of the quires. Other types of board attachments were also used.

Interestingly, the board attachments of Armenian bindings are similar in concept to Carolingian board attachments. In Armenian bindings, only one hole is drilled straight through the thin wooden board per sewing station, and either one folded cord or two separate cords are passed through the hole forming a distinctive kind of loop (see Figures 6 and 7). Either of these two methods

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[23]Szirmai, 3-4; van Regemorter, "Evolution...", 276-278.

[24]Szirmai, 3. For a drawing of this Carolingian board attachment method, see: Elisabeth Baras, Jean Irigoin, and Jean Vezin, La Reliure Médiévale-Trois Conférences d'Initiation, 2nd ed. (Paris: Presses de l'École Normale Supérieure, 1981), p. 39, fig. 17; or Léon Gilissen, La Reliure Occidentale Antérieure à 1400-d'après les manuscrits de la Bibliothèque Royale Albert Ier à Bruxelles (Turnhout: Brepols, 1983), p. 32, fig. 9.

produce double cords firmly attached to the board, used as supports upon which to sew the quires.[25]

It is certainly possible that the use of supports in Armenian bookbinding, the only bookbinding tradition in the Near East to do so, was adapted from the so-called Carolingian method in use from about the 8th to the 12th centuries in Europe. Cilicia during the 11th and 12th centuries would be a logical place for these techniques to have been introduced to Armenian scribes and binders. It would be important to see original Armenian bindings dating from this period in order to verify this hypothesis, but unfortunately all 22 Cilician manuscripts which I had the opportunity to examine were rebound. Most were, however, rebound using traditional Armenian methods, probably between the 15th and 17th centuries. The earliest original Armenian bindings seen in this study date from the 14th century,[26] and the traditional techniques were used consistently up to the early 18th century (with two examples dating from the early 19th century).[27]

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[25]See Chapter 2 for details.

[26]Library of Congress Armenian Ms. 4, a Gospel copied in Jerusalem in AD 1321, and Bibliothèque Nationale (Paris) Ms. Arm. 17, a Gospel from Ẓrim city (the Crimea), copied in AD 1356.

[27]UCLA Armenian Mss. 28 and 29.

Another unusual feature related to bookmaking and found in only eight manuscripts in this study was mentioned in Chapter 2, namely the use of the alphabetic system of numbering quires (Figure 21), as opposed to the more commonly used numeric system (Figure 20). Six of the eight manuscripts whose quires were numbered in this way were definitely copied in Cilicia and were dated between 1193 and 1269 AD.[28] One manuscript is missing its colophon, but at least one scholar has tentatively placed it as having been copied in 12th-13th century Cilicia.[29] The eighth manuscript is dated 1283 AD and was copied in the village of Kan, in Karin canton.[30] Note that not all Cilician manuscripts use the alphabetic system--ten others which I examined used the normal numeric system. These ten manuscripts date from AD 1217 to 1357.[31] However, all

[28]The six manuscripts are: Walters Art Gallery Ms. 48 (AD 1193); San Lazzaro Mss. 1635 (AD 1193), 696 (AD 1201), 346 (AD 1220), 641 (AD 1256), and 900 (AD 1269),

[29]Four Gospels, San Lazzaro Ms. 196. It was tentatively dated to the 12th-13th century by Fr. Sargisean, who believed it may have been copied by a student of Nersēs Lambronac'i, while Fr. Janashian argued for an 11th c. date, believing it to have been produced in Greater Armenia. Fr. Mesrop Janashian, Armenian Miniature Paintings (Venice: Armenian Press of San Lazzaro, 1966), 32-34. Fr. Barseł Sargisean, Mayr C'uc'ak Hayerēn Jeṙagrac' Vol. 1, (Venice: San Lazzaro Press, 1914), 473.

[30]San Lazzaro Ms. 1313, Gospels dated AD 1283.

[31]I do not have information for this feature for five other Cilician manuscripts (Pierpont Morgan Library M.740; Freer Gallery of Art Mss. FGA 44.17, 56.11, and 32.18; and New York Public Library Spencer Collection Armenian Ms. 2). The ten manuscripts with normal quire numbering are:

the scribes who copied these manuscripts definitely knew the Armenian numeric system, because they used it to record the text date in their colophons. Why were the quires of some Cilician manuscripts numbered in this unusual way? Again, let us look at Latin manuscripts for a possible explanation.

The most common method of numbering quires in Europe up to the 12th century was to use Roman numerals, usually on the last page of the quire only, in the lower right-hand corner (it later moves to the center of the lower margin).[32] However, after the 5th century, the Latin alphabet was also used, although it was apparently not as common as Roman numerals were.[33] In the 12th century, catchwords began to be used in Latin manuscripts. A catchword is a word written at the end of the last page of a quire which anticipates the first word of the next quire, thereby enabling one to match up the quires in proper order. By the 13th-14th centuries, catchwords become the customary method of keeping quires in order,

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Pierpont Morgan Library Ms. M.622; Philadelphia Free Library Mss. 121 and 122; San Lazzaro Mss. 799, 69, 600, 250, 763, 1173, 1012.

[32]E. A. Lowe, Codices Latini Antiquiores Vol VI (Oxford, 1953), vii; E. A. Lowe, Palaeographical Papers 1907-1965 Vol. 1 (Oxford: Clarendon Press, 1972), pp. 202, 271-272.

[33]Lowe, Palaeographical Papers 1907-1965, 271-272.

although numerals and letters reappear in the 15th century in Italy.[34]

It is possible that the alphabetic method of quire numbering in Armenian manuscripts was introduced in Cilicia through contact with Western manuscripts or scribes. The numbering of quires using letters of the alphabet was used in Europe until the 12th century, and Armenians in Cilicia were definitely exposed to European manuscripts at this time. There are, however, two possible problems which must be brought up. The first is that this is obviously a very small sample--I have examined only a total of 22 Cilician manuscripts--seven using the alphabetic system, ten using the normal numeric system, and there were five others for which I have not recorded the feature. An eighth manuscript, not copied in Cilicia, also used the alphabetic system, and also happened to be the latest manuscript in this group, dating from 1283. This may indicate a scribe in Greater Armenia who was trained by a teacher or master who had learned the alphabetic system, perhaps in Cilicia. Obviously, more manuscripts need to be examined directly, not only to record the numbering system, but to see if the same ink and the same hand were used as the rest of the text in

[34]Albert Derolez, Codicologie des manuscrits en écriture humanistique sur parchemin, Bibliologia vols. 5 and 6 (Turnhout: Brepols, 1984), vol. 5, pp. 40, 48-50.

order to verify that the quire numbers were contemporary with the text and were not added during a later rebinding, for example.

The second problem is that although I found this feature almost exclusively in Cilician manuscripts, these particular manuscripts also happened to be the oldest ones which I examined during the course of my research. I therefore must at least mention the possibility that this might simply be an older method of quire numbering in the Armenian bookmaking tradition. Consequently, it is also necessary to see older, non-Cilician Armenian manuscripts. However, it is probable that the original method of numbering quires in Armenian manuscripts was the numeric system, because a similar numeric system is also used in Byzantine manuscripts (with Greek letters, obviously). As mentioned in Chapter 3, the alphabetic system is not found in Greek manuscripts until the Renaissance, where it is probably due to occidental influence.[35] Since Armenian bookmaking very likely originally descended from the Greek and Syriac bookmaking traditions, it would be logical that their quire numbering systems be similar.[36]

The two unusual features of Armenian bookmaking just discussed may have been adapted from or at least

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[35]See Chapter 3. Jean Irigoin, "Pour une étude des centres de copie byzantins," Scriptorium XII (1958): 222.

[36]See Chapters 3 and 4.

influenced by manuscript production methods used in Europe during the 12th century when there was much contact between Cilician Armenia and the West. We also know that the literate class (of which scribes and bookbinders formed a part) most definitely had access to Latin books at this time. The technique of sewing on cord supports, a stronger and more durable binding technique than unsupported sewing, was used in Europe since about the 8th century. It seems to have been retained, adapted and become a part of the Armenian bookmaking tradition for centuries to come. The similarities between Armenian and Carolingian board attachment methods are also notable. The alphabetic system of numbering quires seems to fall out of use by the late 13th century in Armenian manuscripts. Further investigations about this characteristic may help determine whether it is indeed a short-lived "Cilician" method of numbering quires, influenced by some scribes' exposure to Latin manuscripts, or simply an older method. If it is a method used mainly in Cilicia during the 12th-13th centuries, it may be a detail which could help us in determining the date and provenance of manuscripts for which colophons are lacking.

It has been repeatedly emphasized in this study that bookbinding in general, and Armenian bookbinding in particular, is a very traditional, conservative craft. The evidence presented here, after examining manuscript

bindings ranging from the 14th to the 18th centuries which are structurally indistinguishable, further supports this statement. We also know through colophons that knowledge of the craft was passed down from father to son, or master to student, for generations, basically in monastic environments. Manuscripts were, for the most part, for and by the clergy. This is vividly depicted in a manuscript copied in AD 1386 in the Lake Van region, which is illuminated with a double portrait of Petros the "falsely-called" monk symbolically passing the ink pot to his student Mkrtič', both dressed in the traditional and highly distinctive vestments of an Armenian priest.[37] Many Armenian colophons include a request by the scribe to future readers to remember the scribe's master or teacher. One colophon makes this especially clear: "Remember the guilty monk Martiros and my teacher Zak'ara Awanc'i, overseer/teacher of my writing, my painting, and my binding."[38]

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[37]This Gospel is located in the Getty Museum, Ms. Ludwig II 6, f. 13v. The inscription above the portraits reads: "Remember in Christ Petros the falsely-called monk and his student Mkrtič'."

[38]Mount Angel Abbey Library (St. Benedict, Oregon), Ms. Arm. 0007, a Gospel copied in AD 1599 in the Lake Van area. This manuscript has not been included in the data base because it was just examined in Oct. 1992.

Most of the books produced were religious in nature,[39] and were thus imbued with a holy, almost mystical quality by those who made and used them--they were sometimes even considered almost human, as attested to by colophons memorializing their "kidnapping" and subsequent "rescue." These books were respected, sacred vessels of the word of God, and as such were not to be unnecessarily tampered with. Why, then, would these "conservative" Armenian bookbinders then borrow an important structural feature such as supported sewing in their bookmaking?

Although we have seen that Armenian bookbinding does not appear to change significantly for at least four centuries (14th to 18th), we should not forget that Armenians must have been making books since at least the 5th century AD. If supported sewing was introduced in the 12th century, it occurred 700 years after the earliest Armenian books were made. There may be one very simple reason why the concept of supported sewing was borrowed, adapted, and retained in the Armenian tradition--it was probably found to be a better, more durable method than unsupported sewing. It was a structural feature which was easily incorporated into the already established binding method, and also would not alter the outside appearance of

[39]Although there may be some bias towards religious books in this study, as discussed in Chapter 1, "Methodology."

the books (the spines remain flat since the cords and sewing recess into the notches). Indeed, it was at first difficult to determine whether these books were sewn on supports or not, until I was able to conduct a very close examination of extremely damaged bindings. This may partially explain why some earlier researchers were misled into believing that Armenian bindings were made without supports, as is found in most of the neighboring bookbinding traditions.

Armenian bookbinding seems to have its origins in the Greek and Syriac binding traditions beginning in the 5th century AD after the invention of the Armenian alphabet, when the first Armenian scribes were sent to Greek and Syriac speaking areas to translate Christian writings into Armenian. They must have also learned to bind their books there. These books were probably made with an unsupported sewing structure, since books sewn on cord supports do not seem to appear until the 8th century AD in Europe. Over the next 700 years, each of these traditions (Armenian, Greek, Syriac, and Georgian) probably slowly developed their own characteristic variations for the binding of their sacred books. It is interesting to note that each of these four groups eventually developed one distinctive method of board attachment (except for the Greeks, who seem to have used a number of board attachment methods). Supported sewing was probably introduced to Armenian

bookbinders during the 12th century in Cilicia, when there was extensive contact with the West and definite access to Latin manuscripts. This more durable method seems to have been learned, adapted, and used until it became part of the traditional method of binding books by Armenians, and was retained for centuries. The bookbinding techniques do not seem to change, even in the diaspora, until manuscript production decreases dramatically after printing in the Armenian language becomes the norm.

Certain details should be recorded consistently in future research. For example, what specific types of wood, leather, thread, textiles, parchment and paper were used? A detailed examination of the paper should be conducted--watermarks would be a valuable source of information indicating sources of bookmaking materials. These are found in European paper manufactured after the 13th century, and can help identify the origin and date of the paper, providing us with interesting information on trade.[40] A study of the pricking and ruling should also be undertaken--often specific workshops used their own

[40]Hunter, 260. The most important publication for the identification of watermarks is: Charles-Moise Briquet, Les Filigranes. Dictionnaire historique des marques du papier dès leur apparition vers 1282 jusqu'en 1600, 2nd ed. (New York: Hacker Art Books, 1966). For a discussion of the Venetian 17th century "Tre-lune" watermarks found in the paper of San Lazzaro Ms. 1571, see S. Merian, "From Venice to Isfahan and Back...," (in press).

individual type of ruling and pricking, as we are probably seeing in the manuscripts described in Chapter 2 from Xlat'. If a ruling frame was used, we might even be able to identify the marks made from an individual frame.

Scientific analyses of the inks would further inform us of the methods and materials used by the scribes and binders, and might eventually aid us in determining the provenance of the manuscripts. If X-ray fluorescence could be adapted for use on books, it might verify whether or not the edges were ever gilt or whether the leather was ever gold-tooled. This type of scientific analysis, coupled with further studies of the pigments, would be invaluable.

A detailed study and identification of the decorative stamps used for tooling these bindings is necessary, as is an analysis of the decoration itself. Here we might find similarities with Islamic bindings in the tools and designs used, such as the guilloche borders and the distinctive hatched tool used to form them (as in Figures 14 and 15). European influence in later bindings might also be established, for example in the New Julfa bindings. Similar research should be conducted on the silver and jeweled covers, including investigations on the design, techniques and materials used, style, iconography, and inscriptions. The extant metal clasps should also be examined and compared.

Examination of Syriac and Georgian bindings would be extremely interesting to undertake, not only to serve as comparisons with Armenian bindings as I began to do here, but, as these studies have not yet been done, to learn about the bookmaking traditions of these cultures in and of themselves.

Information on bookbinding, scribal, and artists' tools might also be revealed through indirect methods. For example, in the 15th century Codex no. 55 in the Mekhitarist Collection in Vienna, the portrait page of Matthew shows him writing his Gospel with a wide array of tools displayed before him, such as scissors, knives, paring and cutting instruments, gilding burnishers and more.[41] A 13th century Cilician manuscript shows similar tools.[42] Many of these tools were traditionally used by bookbinders.[43]

Armenian bookbinding evolved its own distinguishing characteristics over the many centuries of its development since Armenians first started copying books in their own

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[41]Heide & Helmut Buschhausen, Armenische Handschriften der Mechitharisten-Congregation in Wien (Vienna, 1981), plate 36.

[42]Ibid., plate 17.

[43]See Duncan Haldane, Islamic Bookbindings in the Victoria and Albert Museum (London: World of Islam Festival Trust, 1983), 17, for a photograph showing the exact same types of binding tools, although Persian, used in the 19th century.

language, and consequently binding books, in the 5th century AD. The significance of books as cultural and historical objects is evident, not only to those specifically interested in codicology, but also to social historians and those studying the history of medieval technology. Not only has this examination of the craft of bookbinding given us some insight on the interaction of Armenian literate society with other cultures, but it has also enabled us to see how historical circumstances could have subtle but important effects on the technological development of the Armenian bookbinding tradition, and subsequently on its final, distinctive form.

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APPENDIX 1

MANUSCRIPT COLLECTIONS CONSULTED

COLLECTION	# MSS
American Bible Society (NY, NY)	2
Biblioteca Casanatense (Rome, Italy)	2
Bibliothèque Nationale (Paris, France)	7
British Library (London, England)	4
Catholic University-Institute for Christian Oriental Research (Washington, DC)	4
Collection of Dr. Paul Bedoukian (Wilton, CT)	3
Collection of Tina & Haroutune P. Hazarian (NY, NY)	4
Columbia University--Rare Book and Manuscript Library (NY, NY)	6
Eton College Library (Eton, England)	1
Free Library of Philadelphia-Rare Book Dept. (Philadelphia, PA)	5
Freer Gallery of Art (Washington, DC)	8
Getty Museum (Malibu, CA)	3
Grolier Club (NY, NY)	1
Library of Congress (Washington, DC)	4
McGill University-Rare Books & Special Collections (Montreal, Canada)	3
Mekhitarist Congregation Monastic Library (San Lazzaro, Venice, Italy)	57
Metropolitan Museum of Art (NY, NY)	1
New York Public Library-Manuscripts Division (NY, NY)	2
New York Public Library-Spencer Collection (NY, NY)	6
Pierpont Morgan Library (NY, NY)	11
UCLA-Dept. of Special Collections, University Research Library (Los Angeles, CA)	10
Union Theological Seminary (NY, NY)	4
University of Chicago-Special Collections (Chicago, IL)	1
Vatican Library (Rome, Italy)	4
Walters Art Gallery (Baltimore, MD)	9
Yale University-Beinecke Library (New Haven, CT)	5
TOTAL	167

APPENDIX 2

SAMPLE OF RECORDING CARD

FIELD RECORDING CARD FOR ARMENIAN BOOKBINDINGS

Title:
Script:
Colophon:
Text/Date:
Text/Place:
Binding/Date:
Binding/Place:

Call number:
Date:
Location:
Collection:
Recorder:

PHOTODOCUMENTATION:[ ]B/W [ ]color [ ]slides [ ]rubbing [ ]radiograph
date/initials:
proofsheet #:
TEXTBLOCK:

dimensions: x x cm.
material: [ ] parchment
[ ] paper
thickness:
grain direction:
watermark:
evidence of trimming:

condition: [ ] intact
[ ] incomplete
[ ] mended
[ ] inserts

collation: gatherings
#'ing system:[ ]normal [ ]other

catchwords:[ ] yes [ ] no
Derolez #____
rulings: [ ] yes [ ] no text:[ ] above
[ ] indented [ ] below
[ ] drawn [ ] on
Derolez #____
[ ] ruling frame

prickings: [ ] yes [ ] no
[ ] head & tail
[ ] fore-edge
Derolez #____

written area: x cm.
columns:
text lines per col:
ruling lines per col:
image media:[ ] ink/colors:
[ ] pigment
[ ] gold
[ ] marginal dec.
[ ] full-pg illus.
[ ] smaller illus.
[ ] headpieces
[ ] capitals
[ ] animal capitals
[ ] page markers

EVIDENCE OF REBINDING: [ ]yes [ ]no

sewing: [ ] primary
[ ] resewn
[ ] repairs
sewing stat:
loc:
thread:
twist:

notches:[ ] yes [ ] no
#:
loc:
type:[ ]V [ ]W [ ]other
evenly spaced:[ ]yes [ ]no

edge coloring:[ ] yes [ ] no
color:[ ] red
[ ] magenta
[ ] gilt
[ ] other:

[ ] to spine
[ ] not to spine
____ cm from spine
[ ] horseshoe shape
[ ] black line
[ ] other design

endleaves:[ ] yes [ ] no
[ ] parchment
[ ] paper
[ ] watermark
[ ] old ms.
[ ] erkat'agir
[ ] 1st leaf used as pastedown

Armenian Ms. #:

COVERING:

dimensions: x x cm.

material: [ ] leather: type:
[ ] cloth
color:
thickness:

substrate material:
thickness:
grain direction:
bevel:

condition: [ ] intact
[ ] fragmentary
[ ] repaired [ ] rebound

squares: [ ]yes [ ]no

spine lining: [ ]yes [ ]no [ ]can't see
extends _____cm. onto bds.
fabric:

spine: [ ] ruled
[ ] vert.|| [ ] horiz.--
[ ] smooth (no bands)
[ ] raised bands

board attachment: [ ]loops/#=_____
correspond w/notches?: [ ]yes [ ]no
loc:
central loops thicker: [ ]yes [ ]no
other:

turn-in construction:
[ ] tooled
[ ] pegs [ ] slits

adhesives: [ ]yes [ ]no

cloth doublure: [ ] yes [ ] no
fabric: [ ] endpapers
weave:
colors:
overlap:

flap: [ ] yes [ ] no
[ ] intact: x cm; ext.____cm onto b. bd.
[ ] fragmentary
[ ] evidence only; describe:
[ ] tooled
[ ] doublure
[ ] diagonal cut

Publications/Exhibitions:

endbands: [ ]yes [ ]no
condition:

[ ] raised /ht.=
[ ] triple
[ ] typical
[ ] wooden wedge
[ ] string in headcap
holes in boards:
core material:
# of cores:
wrapping material:
colors:
[ ] not raised
type:

clasps: [ ]yes [ ]no evidence
[ ] intact
[ ] evidence (holes)
number:
placement F:
B:
leather straps: [ ]yes [ ]no
other:

decoration: [ ] blind-tooled
[ ] gold-tooled
[ ] metal plaque
[ ] metal pieces
[ ] jewels
[ ] front=back
description:

Title:
Script:
List colophons:

Call #:
Date:
Location:
Collection:
Recorder:

Main colophon(s):

Scribe:

Illuminator:

Binder:

Patron:

Text/Date:

Text/Place:

Binding/Date:

Binding/Place:

Notes:

APPENDIX 3

TRANSLITERATION SYSTEM USED

TRANSLITTÉRATIONS à employer dans REArm. N.S. pour l'arménien

Ա	Բ	Գ	Դ	Ե	Զ	Է	Ը	Թ	Ժ	Ի	Լ	Խ	Ծ	Կ	Հ	Ձ	Ղ	Ճ	Մ
ա	բ	գ	դ	ե	զ	է	ը	թ	ժ	ի	լ	խ	ծ	կ	հ	ձ	ղ	ճ	մ
a	b	g	d	e	z	ē	ë	t'	ž	i	l	x	c	k	h	j	ł	č	m

Յ	Ն	Շ	Ո	Չ	Պ	Ջ	Ռ	Ս	Վ	Տ	Ր	Ց	Ւ	Փ	Ք	Օ	Ֆ	ՈՒ
յ	ն	շ	ո	չ	պ	ջ	ռ	ս	վ	տ	ր	ց	ւ	փ	ք	օ	ֆ	ու
y	n	š	o	č'	p	ǰ	ṙ	s	v	t	r	c'	w	p'	k'	ō	f	u

Taken from: Revue des Études Arméniennes

APPENDIX 4

GLOSSARY OF TECHNICAL TERMS

(Sources listed at end. Armenian translation provided in parentheses, if known)

Armenian bole: a red clay substance often used as a primer before gilding; can also be used alone as a coloring material.

blind tooling: a method of decorating leather bindings by using a metal tool (either cool or heated) and impressing it against the slightly dampened leather which covers the book; no gold is used. (When gold is used between the leather and the tool, the decoration is termed "gold-tooling").

board (kołˇ; taxtak): either the upper (veri kołˇ) or lower cover (vari kołˇ) of the book, which protects the text block. It may be made of wood, pasteboard, layers of papyrus, etc.

board attachment: any of a variety of methods used for connecting the boards to the sewn text block in a codex book [q.v.]

bookbinding (kazmararut'iwn): process by which sheets of paper, parchment, or papyrus, usually folded, are secured and attached to some kind of protective covers to form a codex book [q.v.] In the past, this was usually done by sewing. (R & E)

case binding: a type of binding where the covers of the book (the "case") are made separately and are attached to the already sewn text block by gluing the first and last leaves of the text block to the inside boards of the previously prepared case. (R & E)

catch stitch: see "kettlestitch."

catchword: word written at the bottom of a page under the main text indicating what the first word at the top of the next page should be. These were used to aid the bookbinder in gathering and assembling the quires [q.v.], and in printed books were used as an aid in imposing the press forms. (B.M.)

cloth doublure: see "doublure."

codex book (matean; kodek's): the form of the book, still in use today, in which leaves of paper (or parchment, etc.), either single sheets or folded sheets in sections, are attached together at one end (either by sewing or by the use of adhesive), and protected by some type of cover at the beginning and end of the text block.

codicology: the study of the materials used and the process of fabrication of a book (printed or manuscript); the study of the book as an object; the archaeology of the book.

collating: (baʁtatel?) "The process of assembling a book in proper order, and of checking the completeness of the book and the correct sequence of the leaves." (B.M.)

colophon (yišatakaran): inscription written by the scribe (usually at the end of the manuscript) after he has finished copying it, and often includes the date it was finished and the place where it was copied. Armenian scribes often gave much more information, including personal details about the scribe and his family, the patron who commissioned the work, historical information, and occasionally even details about the making of the manuscript. Printed colophons can also be found in early printed books.

countermark: a smaller watermark [q.v.] placed on the opposite half of the sheet to the watermark. It is often the name or initials of the papermaker, and may include the date or place of manufacture, or may simply be a symbol. Countermarks were introduced in the 17th century. (R & E)

doublure: in its strictest sense, a leather lining on the inside of the boards. In Armenian bindings, the inside boards are most commonly lined with cloth, and will be referred to in this study as "cloth doublures". (R & E)

endband: an embroidered sewing found at the head and tail of the spine, which had a structural function in that it aided in connecting the sections to each other; raised endbands [q.v.], among others, also connected the text block to the boards. Today, endbands are simply decorative since they are made separately (usually by machine) and are just glued on at the head and tail, and therefore have no structural function. They are also called headbands.

endband core: the support around which the endband embroidery is worked. They can be made of cord, leather, vellum, rolled paper, etc. (J.G.)

endleaves (pahpanak): leaves added at the beginning and end of a text, often sewn in. They are also called endpapers. In Armenian manuscripts, it is not unusual to find a folded sheet from an old discarded parchment manuscript being used as endleaves. See also "flyleaf" and "pastedown."

flyleaf: the part of the endleaves which is not pasted down onto the boards.

fore edge: the edge of the book which is parallel and opposite to the spine.

fore edge flap (dṙnak; goc'elu mas): a cloth-lined leather flap found on the fore edge of many Armenian bindings. It is the same height and width as the fore edge.

gathering: see "quire."

glair (**glaire**): a mixture of egg white and vinegar or egg white and water used to bond gold leaf to leather during gold tooling or in gilding the edges of a book. (R & E)

glue: an adhesive made from animal products such as hide and/or bones.

gold tooling: see "blind tooling."

grecquage: French term given to the small V-shaped notches cut into the folds of the quires of Greek manuscripts to facilitate the sewing of the text block; also found in Armenian manuscripts. See also "notching."

gutter: inner margin of a page in a book, nearest to the sewing.

head (glux ?): the top part of a book.

headband: see "endband."

headcap: "The leather covering at the head and tail of the spine of a book, formed by turning the leather on the spine over the head and shaping it." (R & E)

herringbone: type of sewing "... with a link stitch on supports which produces a distinctive pattern of rows of parallel lines sloping in opposite directions." (F.B.)

hinge: "The interior flexing position in the gutter [q.v.] of the board opening between cover and text block." (G.F.)

hollow back: a binding in which the covering material (leather or cloth) is not glued to the spine, resulting in a space between the spine and the covering. (R & E)

joint: "The external flexing position in the binding cover." (G.F.)

kettlestitch: a knotted stitch made at the end of each section at the head and tail, connecting the section to the preceding one. It is also called "catch stitch." (A.J.)

leaf (t'uɣt'?/ t'ert'?): "One of the units resulting from folding a sheet of paper, vellum, etc., into a section (signature). A leaf consists of two pages, one on each side,..." See also "recto" and "verso." (R & E)

manuscript (grč'agir; jeṙagir): a hand-written book.

mitered corner: on the inside of the boards, after turning in the leather over the boards, the juncture at the corner where the two pieces of leather meet flush against each other at a 45 degree angle. (R & E)

notching: see "grecquage." In Armenian manuscripts, the notching can be V-shaped, W-shaped, or occasionally even a half circle.

palimpsest: a parchment manuscript in which the later writing has been superimposed over earlier writing, which had previously been scraped off or otherwise removed as much as possible. It is sometimes possible to discern the earlier writing, however. This procedure was done to economize on parchment. (R & E)

parchment (magaɣat'): specially treated opaque, transluscent animal skin used as a writing material, especially before paper was in common use. There is some discussion as to the difference between parchment and vellum; vellum is sometimes defined as being a finer grade of parchment, other times specifically as calfskin. In this study the two words will be used interchangeably. [R & E]

paste: an adhesive made from a heated mixture of starch (such as wheat or rice) and water.

pastedown: the part of the endleaf that is pasted down to the inside of the boards. Armenian manuscripts generally

do not use pastedowns; instead, cloth doublures [q.v.] line the inside of the boards.

prickings: small pricked holes or tiny knife slits made parallel to each other and evenly spaced along the edges of a sheet of paper or parchment in order to be joined together by a drawn or indented line. The resulting lines were used as ruling lines by the scribe. See "rulings."

quire (t'ert'k'?/ tetr?/ prak/ mamul): a packet of folded sheets of paper or parchment; the number of folded sheets varies. A number of quires will be sewn together to form the text block. Quires are also called sections, gatherings, or signatures.

raised bands: the raised ridges on the spine of a book caused by the protrusions from the sewing supports.

raised endband: an endband which is higher than the head and tail of the book. Raised endbands are not only sewn into the spine, but also tied down onto the upper and lower boards near the spine on boards which have no squares [q.v.]. They are commonly found on Greek, Armenian, and Syriac bindings. See "endband."

recto: "The right-hand page of an open book or manuscript, usually bearing an odd page number." See also "verso." (R & E)

rubbing: a method of transfering the tooled design of a binding onto paper by placing a very thin piece of tissue paper over the tooling and rubbing over the paper with a soft lead pencil so as to get the impression of the tooling.

ruling frame (toʕašar; in Arabic, masṭara): a mechanical device used for ruling paper made of a board with parallel strings or wires stretched across it. The dampened paper would be pressed against this device in order to produce indentations for use as ruling lines [q.v.] Ruling frames are also used in the Islamic, Syrian, and Hebrew bookmaking traditions.

ruling lines or **rulings**: parallel markings made on paper or parchment to aid the scribe in writing in straight lines. Rulings can be drawn on the sheets or indented. See "ruling frame."

section: see "quire."

sewing station: each notch (or hole) in the fold of the quire where the needle and thread enters or leaves the quire.

signature: see "quire."

size: a material used for sizing paper, either internally or on the surface of the sheet. Gelatin and starch are two common sizing agents. See also "sizing." (R & E)

sizing: process of adding a material to the surface of paper in order to increase its resistence to the penetration of liquids (such as ink), increase its smoothness, etc. See also "size." (R & E)

spine (ḱṛnak or t'ikunk'): that part of the book where the quires of folded sheets are sewn together. It is also called the back, backbone, or shelfback. (R & E)

squares: that part of the boards which is just slightly larger than the text block at the head, fore edge and tail of a book. Armenian bindings usually have no squares since the text block and the boards are cut the same size.

supported sewing: a type of sewing in which the quires are connected by thread passing around a support, such as a cord, thong, or linen tape. (G.F.)

tabby weave: a type of cloth weave in which the threads are woven alternately one up and one down. It is also called plain weave.

tail (otk'?): the lower part of a book.

text block: "the body of a book, consisting of the leaves, or sections, making up the unit to be bound, rebound, or restored." (R & E)

tight back: a book construction in which the covering material (usually leather) is glued down directly onto the spine or onto the spine lining if there is one. (B.M.; A.J.)

turn-in: that part of the leather (or paper or cloth) covering which gets turned over the edges of the boards at the head, tail and foredge onto the inside of the boards.

twist: direction in which the fibers of a thread are turned together. It can be either S-twist or Z-twist.

tying down: in working endbands, the step in which the endband threads are sewn into the quires through the spine (usually below the kettlestitch), and then are brought back up from the inside of the quire and wound around the endband core. The threads may be sewn into the center of each quire, but not necessarily. (R & E; B.M.)

unsupported sewing: type of sewing in which the quires are directly connected to each other by thread alone, using some sort of a link stitch, without the use of any outside support cord, thong, etc. (G.F.)

vellum: see "parchment."

verso: "The back or reverse side of a leaf of an open book or manuscript, and one which usually bears an even page number." See also "recto." (R & E)

watermark (ǰraniš): a distinguishing symbol or design found in paper which can be seen through transmitted light and which was incorporated in the paper during manufacture. In handmade paper it is made by twisting wire into the desired design and attaching it to the papermold, with the result that the paper fibers will be less thick at that spot, thereby allowing it to be seen when held up to a light. Watermarks can sometimes be used to determine the date and place of manufacture of paper. (R & E)

* * * * *

Sources:

A.J. = Arthur W. Johnson, The Thames and Hudson Manual of Bookbinding (New York: Thames and Hudson Inc., 1984 reprint of 1978 ed.)

B.M. = Bernard Middleton, The Restoration of Leather Bindings (Chicago: American Library Association, 1972).

F.B. = Frederick A. Bearman, Nati H. Kravitsky, and J. Franklin Mowery, Fine and Historic Bookbindings from the Folger Shakespeare Library (Washington, D.C.: Folger Shakespeare Library, 1992).

G.F. = Gary Frost, "A Vocabulary of Terms for Book Conservation Practice," (unpublished class handout, Columbia University, New York, 1984).

J.G. = Jane Greenfield, "Terms Used in Describing Bindings," (Unpublished photocopy, n. d.)

R & E = Matt T. Roberts and Don Etherington, Bookbinding and the Conservation of Books-A Dictionary of Descriptive Terminology (Washington D.C.: Library of Congress, 1982).

APPENDIX 5-LIST OF MANUSCRIPTS

MS #	CONTENT	COLLECTION
1	Collection of Canticles (Ganjaran)	Columbia Univ. Rare Books
2	Hymnal	Columbia Univ. Rare Books
3	Miscellany	Columbia Univ. Rare Books
4	Nersēs Šnorhali's Works, Sermons, etc.	Union Theological Seminary
5	Hymnal	Union Theological Seminary
6	Gospel	Union Theological Seminary
7	SCROLL-Roll of Cyprian	Union Theological Seminary
8	Phil. Works of David the Philosopher	NYPL Manuscripts Division
9	Hymnal	NYPL Manuscripts Division
10	Gospel	Dr. Paul Bedoukian Collection
11	Collection of Canticles (Ganjaran)	Dr. Paul Bedoukian Collection
12	Hymnal	Dr. Paul Bedoukian Collection
13	Hymnal	Tina & Haroutune Hazarian (ex-coll.)
14	Gospel	Tina & Haroutune Hazarian (ex-coll.)
15	Gospel	Tina & Haroutune Hazarian (ex-coll.)
16	Gospel	Tina & Haroutune Hazarian (ex-coll.)
17	Gospel	NYPL Spencer Collection
18	Hymnal	NYPL Spencer Collection
19	Gospel	NYPL Spencer Collection
20	Gospel	NYPL Spencer Collection
21	Jewish Bride	NYPL Spencer Collection
22	Gospel	NYPL Spencer Collection
23	Gospel	Pierpont Morgan Library
24	Lectionary (Čašoc')	Pierpont Morgan Library
25	Menologium (Yaysmawurk')	Pierpont Morgan Library
26	Gospel	Pierpont Morgan Library
27	Gospel	Pierpont Morgan Library
28	Gospel	Pierpont Morgan Library
29	Sermons concerning Angels & the Soul	Pierpont Morgan Library
30	Gospel	Pierpont Morgan Library
31	Gospel	Pierpont Morgan Library
32	Lives of the Saints & Christ	Pierpont Morgan Library
33	Scholium & Epistles of St. Cyril of Alexandria	Pierpont Morgan Library
34	Gospel	Library of Congress
35	Story of Adam & Eve; & Sermons	Library of Congress
36	Missal (Xorhrdatetr)	Library of Congress
37	Psalter	Library of Congress
38	Gospel	Freer Gallery of Art
39	Gospel	Freer Gallery of Art
40	Gospel	Freer Gallery of Art
41	Gospel	Freer Gallery of Art
42	Gospel	Freer Gallery of Art
43	Psalter	Freer Gallery of Art
44	Hymnal	Freer Gallery of Art
45	Gospel	Freer Gallery of Art
46	Gospel	Walters Art Gallery
47	Gospel	Walters Art Gallery
48	Gospel	Walters Art Gallery

APPENDIX 5-LIST OF MANUSCRIPTS

MS #	CONTENT	COLLECTION
49	Gospel	Walters Art Gallery
50	Gospel	Walters Art Gallery
51	Gospel	Walters Art Gallery
52	Hymnal	Walters Art Gallery
53	Gospel	Walters Art Gallery
54	Hymnal	Walters Art Gallery
55	Gospel	Metropolitan Museum of Art (NY)
56	On the Heavenly Hierarchy	Catholic University-ICOR
57	Gospel	Catholic University-ICOR
58	Missal (Xorhrdatetr)	Catholic University-ICOR
59	Gospel	Catholic University-ICOR
60	Miscellany	McGill University-Rare Books
61	Breviary (Žamagirk')	McGill University-Rare Books
62	Gospel	McGill University-Rare Books
63	Gospel	American Bible Society (NY)
64	Gospel (PRINTED 1816, Venice)	American Bible Society (NY)
65	Ritual (Mašṭoc')	Yale University (Beinecke Lib.)
66	Gospel	Yale University (Beinecke Lib.)
67	Collection of Canticles (Ganjaran)	Yale University (Beinecke Lib.)
68	Miscellany	Yale University (Beinecke Lib.)
69	Brief Exposition on 7 Sacraments of the Arm. Church	Yale University (Beinecke Lib.)
70	Gospel	Free Library (Philadelphia, PA)
71	Gospel	Free Library (Philadelphia, PA)
72	Antiphonary (Manrusmunk')	Free Library (Philadelphia, PA)
73	Abbreviated Liturgical Book	Free Library (Philadelphia, PA)
74	Poetical Works by Nersēs Šnorhali & others	Free Library (Philadelphia, PA)
75	Gospel	Grolier Club (NY, NY)
76	Gospel	Univ. of Chicago-Spec. Coll.
77	Lives of the Fathers (Vark' Haranc') PRINTED	Eton College Library
78	Bible	Getty Museum
79	Gospel	Getty Museum
80	Gospel	Getty Museum
81	Hymnal	Columbia Univ. Rare Books
82	SCROLL-Prayers	Columbia Univ. Rare Books
83	Phylactery (Talisman against Evil)	Columbia Univ. Rare Books
84	Ritual (Mašṭoc')	Biblioteca Casanatense (Rome)
85	Commentary on Isaiah (Esayu Meknič')	Biblioteca Casanatense (Rome)
86	Hymnal	Vatican Library (Rome)
87	Psalter? (or Oskep'orik, acc. to colophon)	Vatican Library (Rome)
88	Gospel	Vatican Library (Rome)
89	Gospel	Vatican Library (Rome)
90	Psalter	Bibliothèque Nationale (Paris)
91	Psalter	Bibliothèque Nationale (Paris)
92	Gospel	Bibliothèque Nationale (Paris)
93	Gospel	Bibliothèque Nationale (Paris)
94	Miscellany/Commentary	Bibliothèque Nationale (Paris)
95	Ritual (Mašṭoc')	Bibliothèque Nationale (Paris)
96	Prayers & Discourse of Grigor Narekac'i	Bibliothèque Nationale (Paris)

APPENDIX 5-LIST OF MANUSCRIPTS

MS #	CONTENT	COLLECTION
97	Bible	San Lazzaro (Venice)
98	Ritual (Maštoc')	San Lazzaro (Venice)
99	Gospel	British Library (London)
100	Gospel	San Lazzaro (Venice)
101	Hymnal	British Library (London)
102	Gospel	San Lazzaro (Venice)
103	Gospel	British Library (London)
104	Ritual & Canticles (Maštoc' & Ganjaran)	San Lazzaro (Venice)
105	Gospel	San Lazzaro (Venice)
106	Gospel	San Lazzaro (Venice)
107	Ritual (Maštoc')	San Lazzaro (Venice)
108	Collection of Sermons/Homilies (Čaŕěntir)	San Lazzaro (Venice)
109	Ritual (Maštoc')	San Lazzaro (Venice)
110	Ritual (Maštoc')	San Lazzaro (Venice)
111	Gospel	San Lazzaro (Venice)
112	Gospel	San Lazzaro (Venice)
113	Gospel	San Lazzaro (Venice)
114	Psalter	San Lazzaro (Venice)
115	Gospel	San Lazzaro (Venice)
116	Ritual (Maštoc')	San Lazzaro (Venice)
117	Oskep'orik, Canon book, Law, & Astronomy	San Lazzaro (Venice)
118	Ritual (Maštoc')	San Lazzaro (Venice)
119	Psalter	San Lazzaro (Venice)
120	Psalter	San Lazzaro (Venice)
121	Psalter	San Lazzaro (Venice)
122	Psalter	San Lazzaro (Venice)
123	Gospel	San Lazzaro (Venice)
124	Lives of the Fathers (Vark' Haranc') PRINTED	San Lazzaro (Venice)
125	Bible	San Lazzaro (Venice)
126	Gospel	San Lazzaro (Venice)
127	Scholium of St. Cyril (Girk' Parapmanc'..)	San Lazzaro (Venice)
128	Book of Questions	San Lazzaro (Venice)
129	History of Matthew of Edessa	San Lazzaro (Venice)
130	Ritual (Maštoc')	San Lazzaro (Venice)
131	Book of Solomon & the Prophets	San Lazzaro (Venice)
132	Ritual (Maštoc')	San Lazzaro (Venice)
133	Gospel	San Lazzaro (Venice)
134	Bible (portion-Book of Solomon)	San Lazzaro (Venice)
135	Gospel	San Lazzaro (Venice)
136	Writings of Early Authors (Hawak'umn Banic' Naxneac')	San Lazzaro (Venice)
137	Gospel	San Lazzaro (Venice)
138	Gospel	San Lazzaro (Venice)
139	Gospel	San Lazzaro (Venice)
140	Gospel	San Lazzaro (Venice)
141	Gospel	San Lazzaro (Venice)
142	Ritual (Maštoc')	San Lazzaro (Venice)
143	Gospel	San Lazzaro (Venice)
144	Hymnal	San Lazzaro (Venice)

APPENDIX 5-LIST OF MANUSCRIPTS

MS #	CONTENT	COLLECTION
145	Oskep'orik	San Lazzaro (Venice)
146	Gospel	San Lazzaro (Venice)
147	Ritual (Maštoc')	San Lazzaro (Venice)
148	Gospel [DETACHED BDG; old bdg described]	San Lazzaro (Venice)
149	Gospel [DETACHED BDG; old bdg described]	San Lazzaro (Venice)
150	Gospel [DETACHED BDG; old bdg described]	San Lazzaro (Venice)
151	Gospel [DETACHED BDG; old bdg described]	San Lazzaro (Venice)
152	Bible	San Lazzaro (Venice)
153	Gospel [DETACHED BDG, but not rebound]	San Lazzaro (Venice)
154	Gospel	San Lazzaro (Venice)
155	Urbat'agirk' (PRINTED 1511-1513, Venice)	San Lazzaro (Venice)
156	Bible	San Lazzaro (Venice)
157	Gospel	British Library (London)
158	Gospel	UCLA-Special Collections
159	Ritual (Maštoc')	UCLA-Special Collections
160	Ritual & Other Texts	UCLA-Special Collections
161	Calendar of Feasts	UCLA-Special Collections
162	Liturgical Texts (Tonac'oyc' & Žamagirk')	UCLA-Special Collections
163	Hymnal	UCLA-Special Collections
164	Book of Homilies (Oskep'orik K'arozgirk')	UCLA-Special Collections
165	Miscellany (Theological & Philosophical Texts)	UCLA-Special Collections
166	Geomancy & Other Texts	UCLA-Special Collections
167	Biblical Lexicon & Other Texts	UCLA-Special Collections

APPENDIX 5-LIST OF MANUSCRIPTS

MS #	CALL NUMBER	TEXT DATE	TEXT PLACE
1	X/ 892.9/ Ar5/ Q	1511	Berkri
2	Arm. Ms. 2 (Plimpton Collection)	1659	nk
3	Arm. Ms. 5 (Smith Collection)	1584 & later	Amit' (Tigranakert) & other
4	Arm. Ms. 4	14??-15??	nk
5	Arm. Ms. 1	1646	Cafay, Crimea (St Sargis)
6	Cage Auburn CB58.5.1607	1293	nk
7	Arm. Ms. 5	16??-17??	nk
8	Arm. Ms. 1	1639-1640	nk
9	Arm. Ms. 2	14??-15??	nk
10	none	1647	Aleppo
11	none	15??	nk
12	none	1646	???
13	#10	1655	Bergnik village, Sebastia
14	#18	1628	Isfahan, New Julfa (Holy Mother of God)
15	#5	1660	???
16	#19	1376	Istanbul
17	Arm. Ms. 1	1301	nk
18	Arm. Ms. 2	13??	Cilicia? Drazark?
19	Arm. Ms. 3	1623	Tokat, district Uzun Mahlay
20	Arm. Ms. 4	1661	Constantinople
21	Arm. Ms. 5	17??-18??	nk
22	Arm. Ms. 6	16??	nk
23	M 620	12??	nk
24	M 803	1334	Vahnašēn (town)
25	M 622	1348	Cilicia (Sis)
26	M 740	1274	Cilicia (Sis)
27	M 749	1461	Van, Varag monastery
28	M 624	1588	Mok, village Surs
29	M 437	15??	nk
30	M 623	1658-1659	New Julfa
31	M 621	16??	nk
32	M 949	16??	nk
33	M 625	1688	nk
34	Arm. Ms. 4/Orien. Nr. East 6003	1321	Jerusalem
35	Arm. Ms. 3/Orien. Nr. East 6002	1653	Aleppo
36	Arm. Ms. 2/Orien. Nr. East 6000	1722	Piskēn (St. Annay)
37	none; "Gift of Alice Adanalian"	nk ???	???
38	FGA 33.5, 47.2-4	10??	nk
39	FGA 50.3	11??	nk
40	FGA 44.17	1253	Cilicia (Hṙomkla)
41	FGA 56.11	1263	Cilicia (Gṙner)
42	FGA 32.18	12??	Cilicia?
43	FGA 37.13	13??-14??	nk
44	FGA 37.19	1651-1652	Agulis? (Siunik); St. Thomas monastery
45	FGA 36.15	1668-1673	Nor Awan (near Sebastia)
46	W 538	1193	Poṙoskan hermitage (Cilicia)
47	W 540	1475	nk
48	W 541	'16??	Amit'?

APPENDIX 5-LIST OF MANUSCRIPTS

MS #	CALL NUMBER	TEXT DATE	TEXT PLACE
49	W 542	1488	Ekełiac' province, monastery of St Awgsēnd
50	W 543	1455	Hizan (or Xizan), Gemaliel monastery
51	W 544	1666	Tokat?
52	W 545	16??	nk
53	W 546	16??	nk
54	W 547	1678	Constantinople
55	16.99, Islamic Dept.	12??	nk
56	Arm. Ms. 1	1662	Etchmiadzin
57	Arm. Ms. 2	1628	Mogs, district Dast
58	Arm. Ms. 3	1648	Etchmiadzin
59	Arm. Ms. 4	15??	nk
60	Arm. Ms. 2	15??-16??	nk
61	none (not yet cat.)	1671	???
62	Arm. Ms. 3	1701	Zet'un
63	ABS Acc. No. 1816	13??-14??	nk
64	none	PRINTED 1816	Venice, San Lazzaro
65	Ms. Vault 70 (formerly Z 107.57)	1694	Germanike (Maraš)
66	Ms. 443 (formerly Z 107.55)	1594	Germanike (Maraš); Zet'un city
67	Ms. 445 (formerly Z 107.51)	1415	Jerusalem
68	Ms. Vault Arm. 2	1688	nk
69	Arm. Ms. 1	16??-17??	nk
70	Ms. 115	1504	Sanahin
71	Ms. 116	1655?	Constantinople?
72	Ms. 121	1314	Cilicia & Jerusalem
73	Ms. 122	1257?	Cilicia (Akner)
74	Ms. 123	1528	Trabizon? canton Hamašēn
75	Ms. Eastern No. 16,056	nk	nk
76	Ms. 951	1661	nk
77	? Cat. #99 in PML exh. catalogue	PRINTED 1641	Isfahan (All Saviour's)
78	I 14 Ludwig Collection	1638	Isfahan
79	II 7 Ludwig Collection	1615	Isfahan
80	II 6 Ludwig Collection	1386	[Lake Van region]??
81	Z892.9 M35	14??-15??	nk
82	Arm. Ms. 6 (Smith Collection)	16??-18??	nk
83	Arm. Ms. 4 (Plimpton Collection)	1636	nk
84	Ms. 5460	1597	Xoranašat
85	Ms. 2027	1603	Urha (Edessa)
86	Vat. Arm. 24	13??	nk
87	Borg. Arm. 5	1595	Sebastia, village Tewoc'ia
88	Borg. Arm. 71	1505	Taron (Glak monastery)/ Muš?
89	Borg. Arm. 85	1635	Amit' ("Tigranakert"); Sts. Kirakos & Sargis
90	Mss. Orientaux, Ms. Arm. 2	14??	nk
91	Mss. Orientaux, Ms. Arm. 4	1525	Constantinople ("Buzandiay")
92	Mss. Orientaux, Ms. Arm. 17-res.	1356	Crimea (Zrim city)
93	Mss. Orientaux, Ms. Arm. 25-res.	1659	Venice
94	Mss. Orientaux, Ms. Arm. 43	1700	Constantinople (Palat' quarter)
95	Mss. Orientaux, Ms. Arm. 61	1668	Constantinople
96	Mss. Orientaux, Ms. Arm. 132	1374	Masarat' village (Sehon mountain region)

APPENDIX 5-LIST OF MANUSCRIPTS

MS #	CALL NUMBER	TEXT DATE	TEXT PLACE
97	Ms. 280 (cat. 10)	1418-1422	Xlat'
98	Ms. 932 (cat. 361)	1459	Xlat'
99	Or. 2707	1542	Xlat' (village Soł̌ac)
100	Ms. 1191 (cat. 171)	1533	Van
101	Or. 5088	1507	Van (Varak monastery)
102	Ms. 1196 (cat 130)	1499	Hizan
103	Or. 2668	1437	Balu (St Georg the Soldier Vank')
104	Ms. 1429 (cat 347)	1469	Balu (Haway Vank'= Holy Mother of God)
105	Ms. 1113 (cat 144)	1475	Balu (village Nexri; Holy Mother of God)
106	Ms. 1200 (cat 145)	1477	Erznkay (Erezi Vank'); [repaired in Balu]
107	Ms. 744 (cat 351)	1492	Balu (village Agham; Holy Mother of God)
108	Ms. 569 (cat 234)	1538	Balu (Hawhawoy Vank'; Holy Mother of God)
109	Ms. 2061 (cat 373)	1548	Sebastia
110	Ms. 1425 (cat 378)	1576	Sebastia (Holy Mother of God, St Illuminator)
111	Ms. 1556 (cat 96)	1591	Sebastia (village Čanči)
112	Ms. 1549 (cat 137)	1656	Sebastia (Holy Mother of God, St Sargis)
113	Ms. 1708 (cat 187)	1370	T'lak awan (in Ekełeac')
114	Ms. 149 (cat 27)	1455	Trebizond (Trapizon; Holy Mother of God)
115	Ms. 900 (cat 111)	1269	Cilicia (begun Maškawor, fin. Barjr berd)
116	Ms. 648 (cat 401)	1637	Trebizond (Pawntos/Trapizon)
117	Ms. 477 (cat 278)	1656 (1655)	Trebizond (Pawntos/Trapizon)
118	Ms. 1115 (cat 399)	1616	Constantinople (St Nikołos)
119	Ms. 1238 (cat 43)	1629	Constantinople (St Nikołos)
120	Ms. 1140 (cat 65)	1650	Constantinople (St Georg)
121	Ms. 123 (cat 36)	1668	Constantinople (St Sargis)
122	Ms. 77 (cat 31)	1669	Constantinople (St Georg)
123	Ms. 1594 (cat 182)	1609	Isfahan (St John Baptist, & others)
124	Ms. 1527	PRINTED 1641	Isfahan (All Saviour's)
125	Ms. 623 (cat 3)	1648	Persia
126	Ms. 1476 (cat 175)	1651	Tatew text/illuminated in Isfahan
127	Ms. 2143	1663?	Isfahan?
128	Ms. 1351	1695	Isfahan (Šoš)
129	Ms. 1485	bet. 1666-70	Isfahan (Šoš)
130	Ms. 1571 (cat 422)	1704-1709	Isfahan (Nor Erevan)
131	Ms. 897 (cat 15)	1710	Isfahan (village Julfa, All Saviour's)
132	Ms. 2035 (cat 425)	1714	Isfahan (Šoš; village Julfa)
133	Ms. 1635 (cat 125)	1193	Cilicia (Skewŕay Vank')
134	Ms. 696 (cat 22)	1201	Cilicia (Hŕomkla)
135	Ms. 799 (cat 136)	1217	Cilicia (Drazark, Holy Mother of God)
136	Ms. 346 (cat 303)	1220	Cilicia (Drazark)
137	Ms. 69 (cat 151)	1244	Cilicia (Hŕomkla)
138	Ms. 641 (cat 100)	1256	Cilicia
139	Ms. 600 (cat 152)	1269	Cilicia (Sis)
140	Ms. 250 (cat 168)	1313	Cilicia (Miakec'er Vank')
141	Ms. 763 (cat 164)	1334	Cilicia (Holy Mother of God, Holy Cross)
142	Ms. 1173 (cat 332)	1345	Cilicia (Sis; St Step'annos)
143	Ms. 1012 (cat 141)	1357	Cilicia (Hŕomkla-Cakołbiwr village)
144	Ms. 1560	1658	Igawur village

APPENDIX 5-LIST OF MANUSCRIPTS

MS #	CALL NUMBER	TEXT DATE	TEXT PLACE
145	Ms. 838 (cat 283)	1601	Cafay? (Crimea?)
146	Ms. 1313 (cat 150)	1283	Kan village (Karin canton)
147	Ms. 1124 (cat 404)	1648	Karin city (=Erzerum; St Step'anos)
148	Ms. 888 (cat 159)	10??-12??	Urhay?
149	Ms. 1214 (cat 112)	1358	Crimea (Kok'su city; St Gregory Illuminator)
150	Ms. 1038 (cat 142)	1373	Amit' (Diarbakir), St Georg
151	Ms. 68 (cat 123)	8??-9??	nk
152	Ms. 2181	1295	nk; perhaps Cilicia?
153	Kurdian Coll. #25; (frag in PGA)	9??-10??	nk
154	Ms. 196 (cat 106)	10??	Greater Armenia? Cilicia?
155	Ms. 2225	PRINTED c 1512	Venice
156	Ms. 1007 (cat 12)	1332	Taron (& Gaylejor?)
157	Or. 5761	1402	Taron (Muš city)
158	Arm. Ms. 3 (=Ms 170/655)	1481???	nk
159	Arm. Ms. 28	1814	Isfahan (New Julfa)
160	Arm. Ms. 29	1817	Iran (probably New Julfa)
161	Arm. Ms. 33	1460-1461	Urc village (Ayrarat region)
162	Arm. Ms. 36	14??-15??	nk
163	Arm. Ms. 38	15??-16??	nk
164	Arm. Ms. 52	nk	nk
165	Arm. Ms. 58	nk	nk
166	Arm. Ms. 73	1625	Aleppo
167	Arm. Ms. 74	1696	Isfahan (New Julfa)

APPENDIX 5-LIST OF MANUSCRIPTS

MS #	BINDING DATE	BINDING PLACE	EVIDENCE OF REBINDING
1	1629	nk	yes, gutter repairs, colophon
2	nk	nk	???
3	nk	nk	???
4	nk	nk	no
5	nk	nk	no
6	no binding	na	yes, no covers now
7	no binding (scroll)	na	na, no binding (scroll)
8	nk	nk	yes
9	1682	Çemişgezek	yes
10	1801	Kayseri	yes
11	nk	nk	???
12	???	???	???
13	???	???	???
14	1628?	Isfahan?	???
15	???	???	???
16	1592	Istanbul	yes, colophon
17	16??	Isfahan?	yes, misbound folios
18	nk	nk	yes, colophon
19	nk	nk	yes, kettlestitches, new flyleaves, more
20	nk	nk	???
21	nk	nk	yes
22	nk	nk	yes, unused notches
23	nk	nk	yes, text & cover unequal
24	1531	nk	yes, colophon, folios out of order
25	nk	nk	???
26	nk	nk	yes, repairs, mends, trimmed
27	1981	New York	yes, rebound 1981 NYC
28	1659 repaired	nk	???
29	nk	nk	no
30	nk	nk	???
31	nk	nk	yes, trimmed & missing text
32	16??	Isfahan?	???
33	nk	nk	???
34	nk	nk	???
35	nk	nk	???
36	nk	nk	???
37	nk	nk	???
38	no binding	na	yes
39	nk	nk	yes, reused binding, mutilations
40	1717?	Xartišar?	yes, colophon, unused notches
41	nk; modern	nk	yes, modern rebinding
42	nk; modern	nk	yes, modern
43	nk	nk	???
44	nk	nk	???
45	nk	nk	yes
46	nk	nk	yes, unused notches
47	nk	nk	yes, colophon, tightly sewn
48	nk	nk	???

APPENDIX 5-LIST OF MANUSCRIPTS

MS #	BINDING DATE	BINDING PLACE	EVIDENCE OF REBINDING
49	1626?	nk	???
50	1617 restored	nk	yes, colophon, trimmed
51	nk	nk	???
52	nk	nk	yes, trimmed, notches are not sewing stations
53	nk	nk	repairs, not sure if rebound??
54	nk	nk	repairs, not sure if rebound??
55	nk	nk	yes
56	nk	nk	no
57	nk	nk	no
58	1912?	nk	yes, 21 loose folios bound together
59	19??	nk	yes, trim, holes not sewing stations
60	1813, Mar 1	nk	yes, colophon
61	nk	nk	yes, folios rebound backwards
62	nk	nk	yes, trimmed, gutter repairs, misbound folios
63	1649	Hapusi village	yes, colophon (or just repaired?)
64	nk	nk	no
65	nk	nk	no
66	nk	nk	no
67	nk	nk	yes, misbound ff, repl pages, trimmed, more
68	nk	nk	yes, misbound folios, unused holes
69	nk	nk	no
70	16??	Isfahan?	yes, gutter mends, misbound folios
71	nk	nk	no
72	nk	nk	yes, unused notches, gutter repairs
73	1654	nk	yes, unused notches, colophon, gutter repairs
74	nk	nk	no
75	nk	nk	yes, trimmed, unused notches
76	nk	nk	no
77	nk	nk	no?
78	nk	nk	rebacked; not sure if rebound?
79	nk	nk	yes, trimmed, gutter repairs, unused notches?
80	1542	Norşen village	yes, colophon, tight sewing
81	nk	nk	no
82	no binding (scroll)	na	na, no binding (scroll)
83	nk	nk	yes, trimmed
84	nk	nk	no
85	nk	nk	yes, gutter rep, rebacked spine, more
86	1492 repaired	nk	yes, trimmed, gutter repairs, unused notches
87	nk	nk	no?
88	nk	nk	yes, unused notch
89	nk	nk	yes, unused notch, trimmed, mends, more
90	1586	nk	yes, trimmed, gutter repairs, extra pages
91	nk	nk	no
92	nk	nk	no
93	1730, Aug 3; inscribed	Isfahan?	no
94	nk	nk	no
95	nk	nk	no, but repaired
96	nk	nk	yes, unused notch, misbound folios

APPENDIX 5-LIST OF MANUSCRIPTS

MS #	BINDING DATE	BINDING PLACE	EVIDENCE OF REBINDING
97	nk	nk	no
98	nk	nk	yes, gutter repairs, 2 kinds paper
99	nk	nk	no
100	nk	nk	no
101	nk	nk	yes
102	1599	nk	yes, colophon
103	nk	nk	yes, gutter rep, new loops, rebacked spine
104	nk	nk	yes, unused notches, trimmed, gutter repairs
105	nk	nk	no
106	1623 repaired	Balu (Holy Mother of God)	yes, colophon, mended notches
107	nk	nk	yes, gutter repairs
108	nk	nk	no
109	nk	nk	no
110	nk	nk	yes, unused notches, trimmed, gutter repairs
111	nk	nk	no
112	nk	nk	no
113	18037, inscribed	Sebastia	yes, unused notches, trimmed, gutter repairs
114	nk	nk	yes, unused notches
115	1467, Aug/Abki	Trebizond	yes, colophon
116	nk	nk	no
117	nk	nk	yes; but may just be sewing repairs?
118	nk	nk	no
119	nk	nk	yes, marks from orig. doublure & clasps
120	nk	nk	yes, rebacked, 4 notches but 2 support cords
121	nk	nk	no
122	nk	nk	no
123	nk	nk	no
124	1700, inscribed	Isfahan	no, but some handwritten replacement pages
125	nk	nk	yes, lots
126	nk	nk	no
127	1663, inscribed	Isfahan?	no
128	1695, inscribed	Isfahan?	no
129	1698, inscribed	Isfahan?	no
130	1710, inscribed	Isfahan	no
131	1710, inscribed	Isfahan?	no
132	nk	nk	no, but front repair (orig front board gone)
133	1972-1974	Padova (Santa Giustina)	yes, rebound in Padova, Italy 1972-74
134	nk	nk	yes, gutter repairs
135	nk	nk	yes, unused notches, gutter repairs, squares
136	nk	nk	yes, gutter repairs
137	nk	nk	yes, doublure impressed on endleaf; more
138	nk	nk	yes, gutter repairs
139	nk	nk	yes, gutter repairs, trimmed
140	nk	nk	yes, unused notches, gutter repairs, trimmed
141	nk, 19th c.	nk	yes, 19th-20th c rebinding
142	nk	nk	yes, gutter repairs
143	nk	nk	yes, unused notches, gutter repairs
144	no binding	[repaired Torino 1987]	yes, repaired, pages of 3 quires laminated

APPENDIX 5-LIST OF MANUSCRIPTS

MS #	BINDING DATE	BINDING PLACE	EVIDENCE OF REBINDING
145	rebound 1694, Dec 1	Hastarxan city	yes, colophon 1694; plus a later rebinding
146	nk	nk	yes, gutter repairs
147	nk	nk	no
148	[last rebound 1980-82]	[rebound Torino]	yes, rebound 1980-2; also rebound before
149	[rebound 1980-82]	[rebound Torino]	yes, rebound 1980-2; probably rebound before
150	[rebound 1980-82]	[rebound Torino]	yes, rebound 1980-2
151	[last rebound 1981]	[rebound Rome, ICPL]	yes, rebound 1981; also rebound before
152	nk	nk	yes, unused center notch
153	nk	nk	yes, conjugate pages repaired
154	nk	nk	yes, paper replacement pages
155	nk	nk; Venice?	no, but this is a re-used binding
156	1577	nk	yes, 3 colophons, gutter repairs, trimmed
157	19th c.	nk	yes
158	16??	Isfahan?	yes, trimmed
159	nk [1814?]	Isfahan?	no
160	nk [1817?]	Isfahan?	no
161	nk	nk	no
162	16??-17??	Isfahan?	yes, trimmed, unused notches, 2 texts
163	16??-17??	Isfahan?	yes, trimmed
164	1710, inscribed	Isfahan?	no
165	1725, inscribed	Isfahan?	yes, missing quires & leaves
166	nk	nk	no
167	nk	nk	???

PLEASE NOTE

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Figure 1. Anatomy of a book. Page 235.

University Microfilms International

Examples of Armenian Bookbinding, at Google Images.

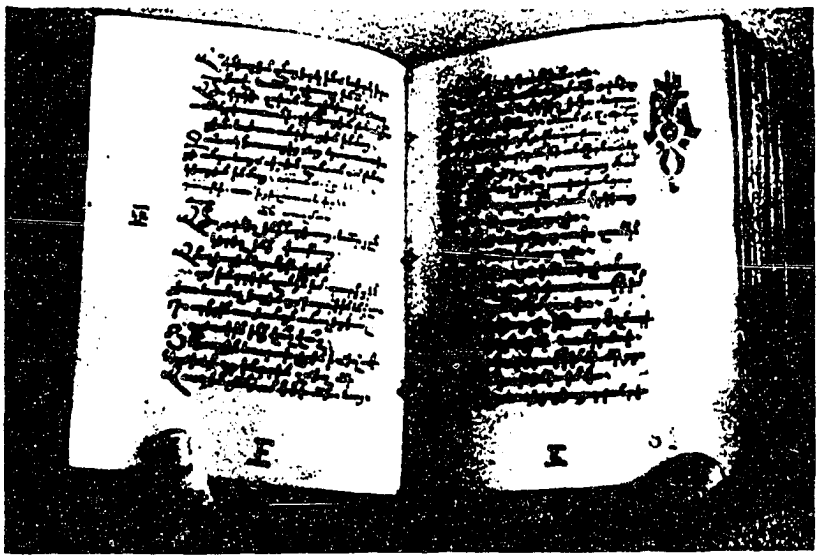

Fig. 2. V-notches visible in gutter between quires ē and ѯ (ff. 80v and 81r). San Lazzaro (Venice), Ms. 77. Psalter, AD 1669 Constantinople, Sb. Georg (St. George). Original binding.

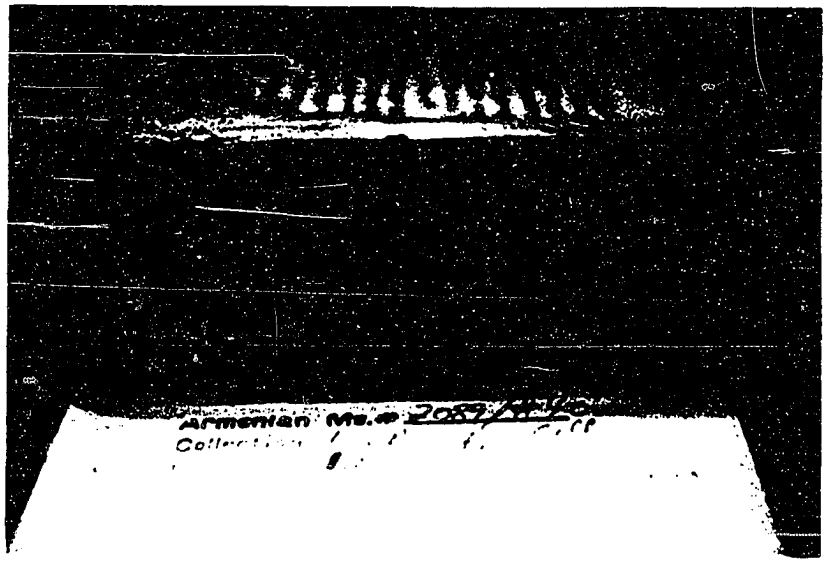

Fig. 3. Supported sewing structure showing herringbone stitch. UCLA Special Collections, Ms. 2089/40. Hymnal and Calendar of Feasts, AD 1650.

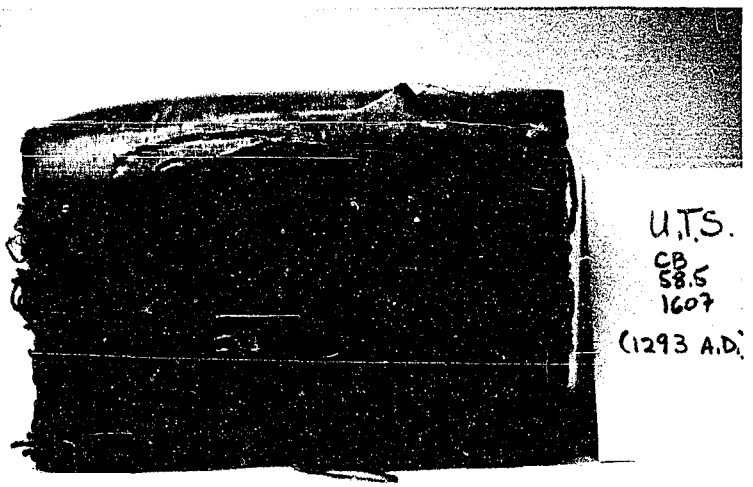

Fig. 4. Herringbone stitch. Union Theological Seminary (New York City), Cage Auburn CB 58.5.1607. Gospel, AD 1293.

Fig. 5. Inside back board showing loop board attachments, endband tie-downs into board at head and tail, and fore-edge flap glued or pasted onto back board. Also notice horizontal crack in board, indicating horizontal wood grain. San Lazzaro (Venice), Ms. 2225. Printed book Urbat'agirk', printed in Venice AD 1511-13.

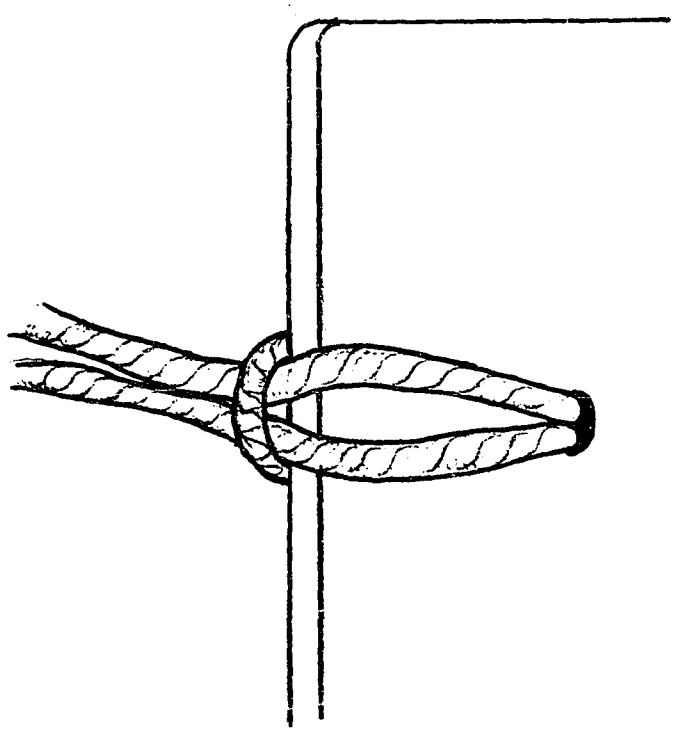

Fig. 6. Armenian board attachment (enlarged). Single cord, folded in half, and threaded through hole in board.

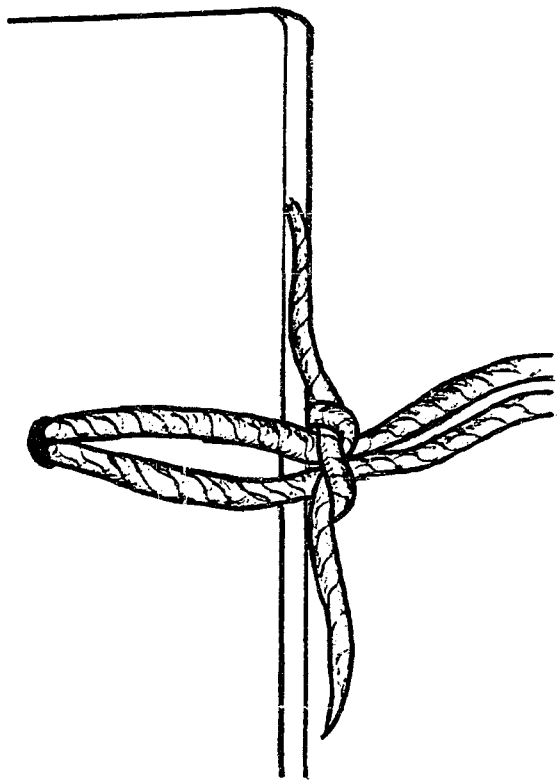

Fig. 7. Armenian board attachment (enlarged). Opposite end of a single folded cord OR two separate cords, knotted in the joint.

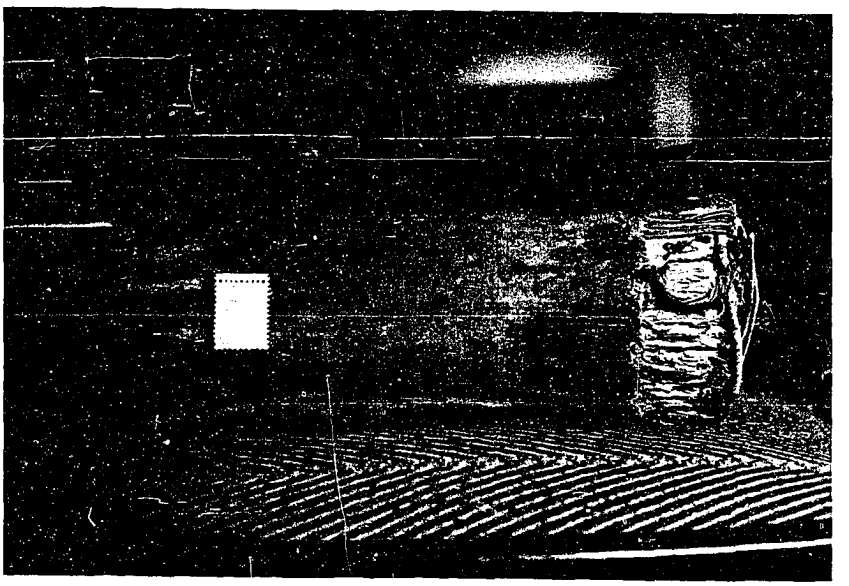

Fig. 8. Spine of book showing cloth spine lining and endband tie-downs into spine through the lining from the primary core. San Lazzaro (Venice), Ms. 2181. Bible, AD 1295, rebound later.

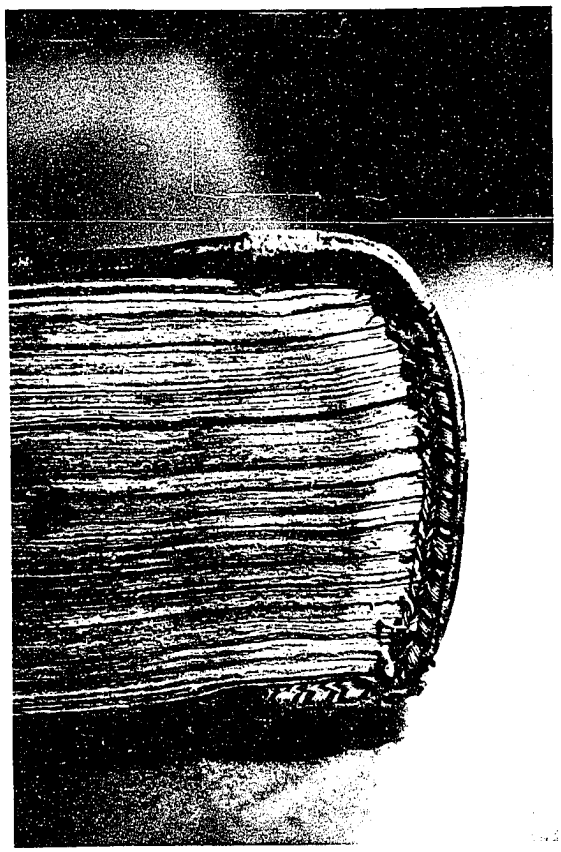

Fig. 9. Raised endband with traditional chevron design in pink, white, and black. Notice red edge coloration with horseshoe shape around the raised endband. San Lazzaro (Venice), Ms. 1571. Ritual, AD 1704-1709, Isfahan (Nor Erevan). Binding date AD 1710 (inscribed).

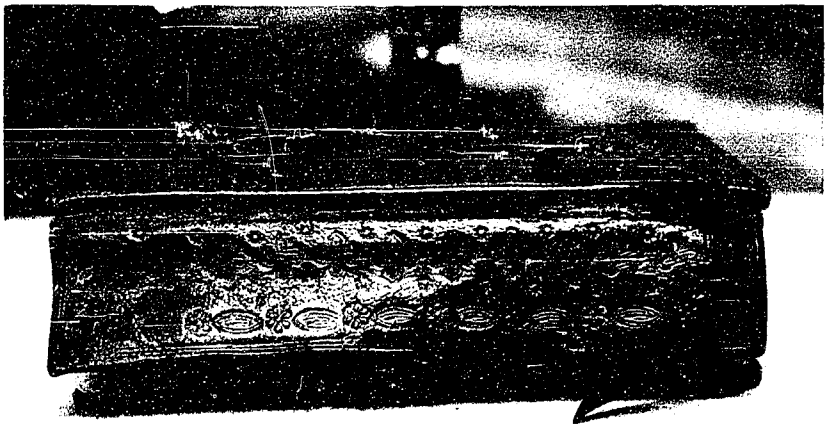

Fig. 10. Example of blind-tooled leather fore-edge flap. Notice one extant leather leather strap still attached to back board. San Lazzaro (Venice), Ms. 744. Ritual, AD 1492, Balu.

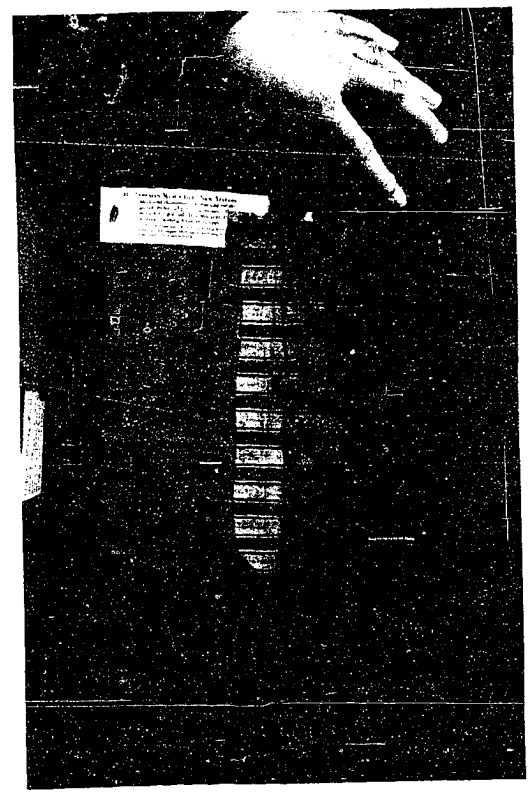

Fig. 11. Inside back board showing fore-edge flap with diagonal cut on striped cloth doublure, and fragments of leather straps on interior. Free Library (Philadelphia, Pa.), Ms. 115. Gospels, AD 1504, Sanahin. Rebound late 17th century, Isfahan.

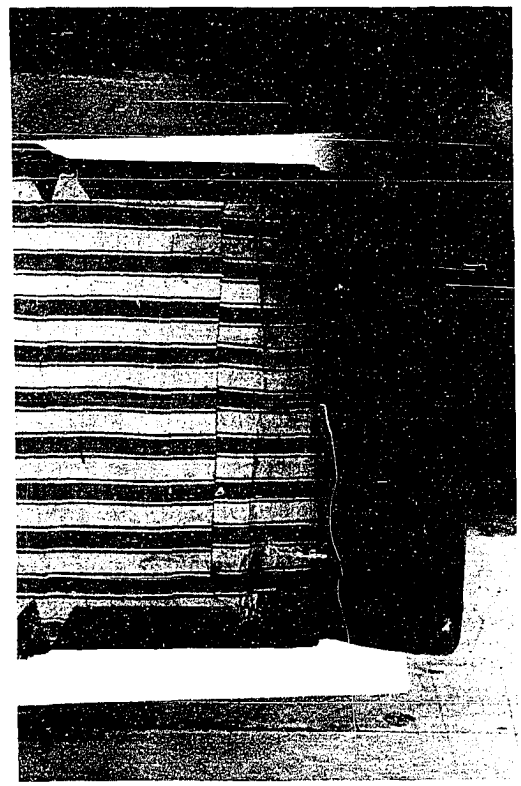

Fig. 12. Inside back board with fore-edge flap and diagonal cut, striped cloth doublure, and slit in leather turn-ins near head and tail to accomodate raised endbands. San Lazzaro (Venice), Ms. 1351. Book of Questions, c. AD 1695, Isfahan. Binding AD 1695 (inscribed).

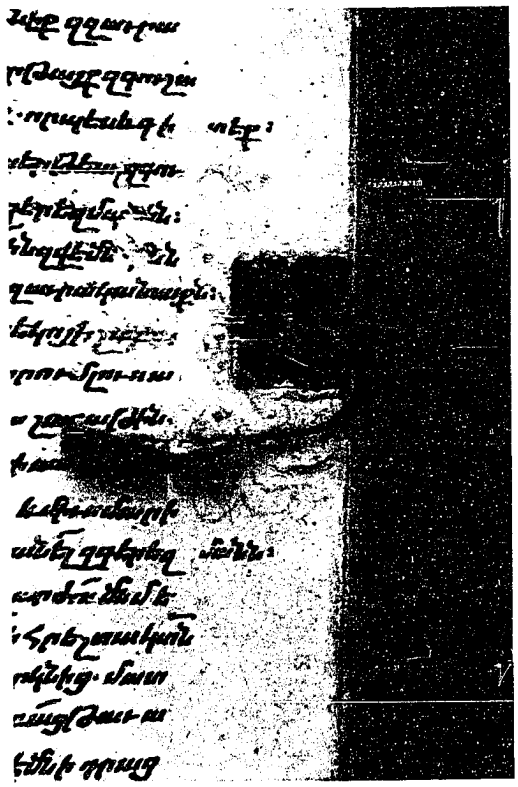

Fig. 13. Cloth page markers, covered with waxy substance. Silk threads sewn through the cloth and paper. San Lazzaro (Venice), Ms. 641. Gospel AD 1256, Cilicia. Rebound later.

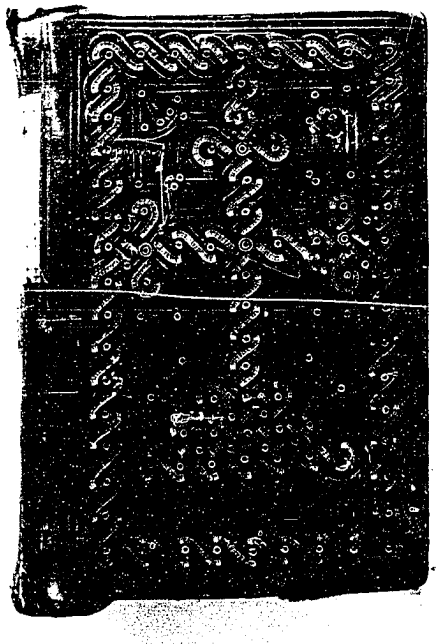

Fig. 14. Upper blind-tooled cover--stepped cross (guilloche). Notice raised endbands at head and tail. San Lazzaro (Venice), Ms. 641. Gospel, AD 1256, Cilicia. Rebound later.

Fig. 15. Lower board--guilloche rectangle and border. San Lazzaro (Venice), Ms. 641. Gospel, AD 1256, Cilicia. Rebound later.

Fig. 16. Blind-tooled rosace design and guilloche border on back board. Notice fore-edge flap on left and raised endbands at head and tail. San Lazzaro (Venice), Ms. 1007. Bible, text 1332, Taron; binding date AD 1577.

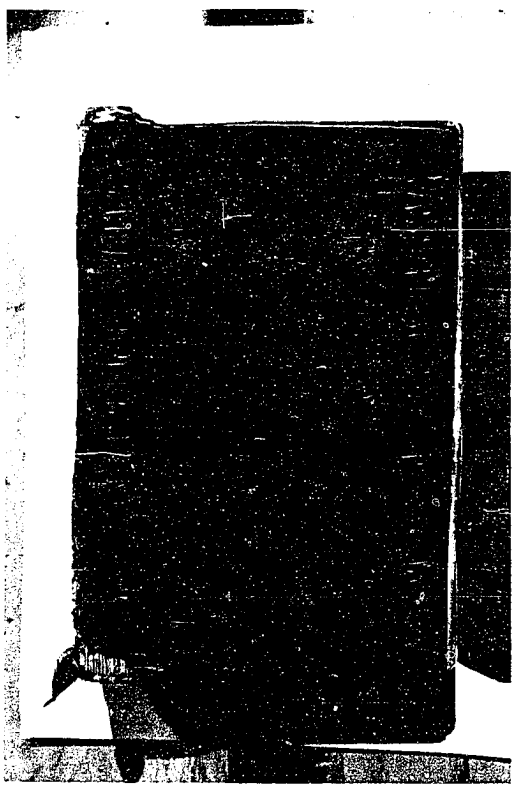

Fig. 17. Upper blind-tooled board with dated inscription: "Written by the hand of Lord Mkrtč. Remember him and his parents Ałat'el and his mother Annay. Year 1144." (= AD 1695). This is an example of a typical blind-tooled binding from Isfahan (New Julfa). Notice fore-edge flap and doublure. San Lazzaro (Venice), Ms. 1351. Book of Questions, c. AD 1695, Isfahan. Binding AD 1695.

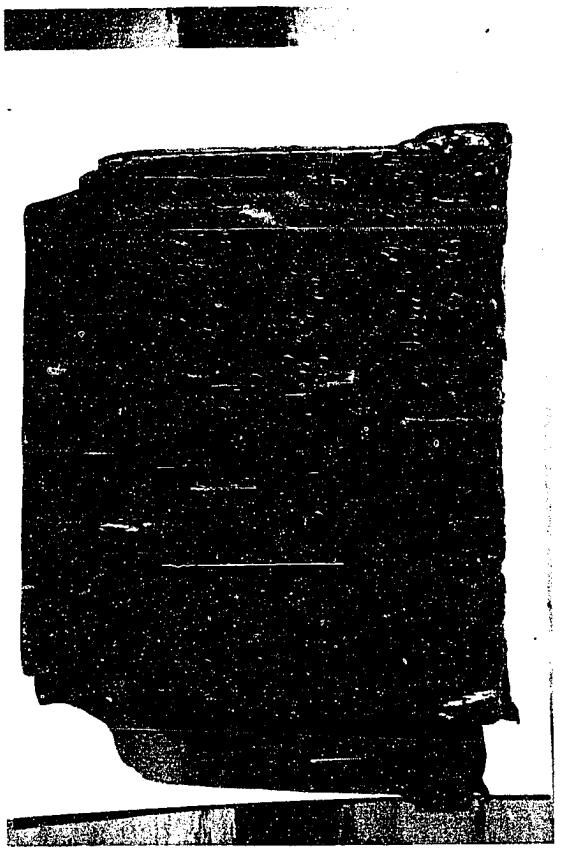

Fig. 18. Lower blind-tooled board; binding from Isfahan (New Julfa), AD 1695. San Lazzaro (Venice), Ms. 1351. Book of Questions, c. AD 1695, Isfahan.

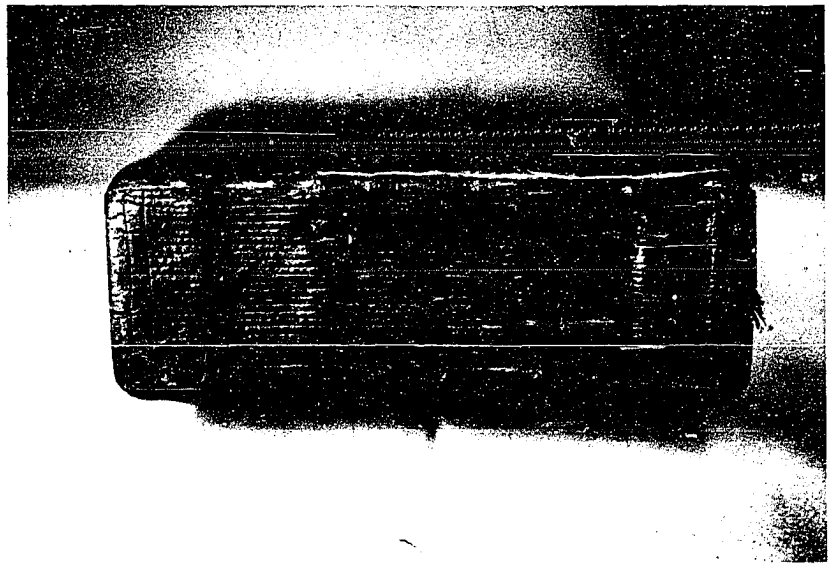

Fig. 19. Leather-covered spine with evenly spaced vertical rulings. Free Library (Philadelphia, Pa.), Ms. 123. Works of Nersēs Šnorhali and others, AD 1528, canton of Hamašēn. Original binding.

NORMAL ARMENIAN NUMBERING SYSTEM

Ա ա	=1	Հ հ	=40	Ջ ջ	=700
Բ բ	=2	Ձ ձ	=50	Ռ ռ	=800
Գ գ	=3	Ղ ղ	=60	Ս ս	=900
Դ դ	=4	Ճ ճ	=70	Վ վ	=1000
Ե ե	=5	Մ մ	=80	Տ տ	=2000
Զ զ	=6	Յ յ	=90	Ր ր	=3000
Է է	=7	Ն ն	=100	Ց ց	=4000
Ը ը	=8	Շ շ	=200	Ւ ւ	=5000
Թ թ	=9	Ո ո	=300	Ւ ւ	=6000
Ժ ժ	=10	Չ չ	=400	Ք ք	=7000
Ի ի	=20	Պ պ	=500	Օ օ	=8000
Լ լ	=30	Ջ ջ	=600	Ֆ ֆ	=9000

Example: The 15th quire would be numbered ԺԵ = 15

Figure 20

ALPHABETIC QUIRE NUMBERING SYSTEM USING THE ARMENIAN ALPHABET

Ա ա	=1	Ի ի	=13	Ձ ձ	=25
Բ բ	=2	Լ լ	=14	Ղ ղ	=26
Գ գ	=3	Խ խ	=15	Ճ ճ	=27
Դ դ	=4	Ծ ծ	=16	Մ մ	=28
Ե ե	=5	Կ կ	=17	Յ յ	=29
Զ զ	=6	Հ հ	=18	Ն ն	=30
Է է	=7	Ձ ձ	=19	Շ շ	=31
Ը ը	=8	Ղ ղ	=20	Ո ո	=32
Թ թ	=9	Ճ ճ	=21	Չ չ	=33
Ժ ժ	=10	Մ մ	=22	Պ պ	=34
Ի ի	=11	Յ յ	=23	Ջ ջ	=35
Լ լ	=12	Ն ն	=24	Ռ ռ	=36

Example: The 15th quire would be numbered " Խ "
which is the 15th letter of the Armenian Alphabet
Figure 21

COLOPHON

Glory to the Most Holy Trinity of the Father and the Son and the Holy Spirit now and forever, Amen. This dissertation was written in the state and city of New York, at the renowned University called Columbia, under the protection of Saints Gregory the Illuminator and Vartan, in the year of the Armenian era 1441, under the patriarchate of Lord Vazgen I, Vehapar and Katholikos of All Armenians, and Garegin II, Katholikos of the Great House of Cilicia, and under the regional jurisdiction of the Archbishops, Lords Mesrob and Khajak, by the hand of a so-called scholar, whose name I have in word but not in deed.

And now, I request of all of you, lovers of knowledge and illumination who should come across this work by reading or by listening, remember in your heavenward prayers the useless and vile scribe Sylvie, falsely-named scholar, and my parents Hagop and Madame Simone, so-called otar, and my sister Nadine and her husband Russ the Italian, and their beautiful daughter Lauren, and all my other blood relatives both living and deceased. Do not blame me for my mistakes and my sloppy letters and crooked margins, for the days were long and difficult, and I suffered enormously, and did what I could to the best of my ability. I had to live a monastic life, and for almost

two years was a Karip, a foreigner outside my own land, and I was miserable. Woe is me, woe is me! My only hope was the diploma.

I suffered greatly, because times were cruel and I had no money. Bread cost over one dollar, and I was unable to buy myself beautiful clothes because I lived with poverty. There was also an evil-minded man who desired to render me homeless, and he almost succeeded in this evil deed. However, even this I endured, because although I am vile and ignorant, I am still more intelligent than the Most Evil One. And I wanted that diploma. I endured countless betrayals because for many months I lived outside my own lands and unscrupulous people took advantage of me. Woe unto me! My life was difficult, my mind was wandering, amusements were lacking, but still, I endured.

This was written and drawn and photographed by the hand of the worthless Sylvie, so-called scholar, in bitter and difficult times. In the year of the Armenians 1440 a terrible war took place in the desert of a far-away land because of greed. For more than ten years people in New York and in countless other regions lived with poverty, begged in the streets, and remained homeless. In November of the year of the Armenians 1441, a new President was elected, called Clinton, and the people were filled with new hope, after twelve years of dreadful and corrupt

leaders. Again in this same year, during the month of December, throughout the country an enormous storm occurred and destroyed much. Also during the writing of this dissertation, the land of Armenia became independent. The people rejoiced, but their freedom was accompanied by incredible difficulties and suffering, including war, hunger, and bitter cold due to lack of fuel. Remember the people of Armenia in your prayers, oh readers, and say many "God have mercy's" because they will surely need them.

Remember also in your heavenward prayers my spiritual parents, the great "Rabunapetuhi" Nina, and the scholars and master teachers Bedros and Tovmas, who imparted their knowledge to me wholeheartedly, and without whom I would surely have been lost. Remember also my friends Danell and Levon and Isabella, who provided spiritual guidance during periods of anxiety while I struggled in these stressful times, and who also helped me with many of my earthly needs. And remember me, oh readers of this work, the so-called scholar Sylvie, dull of wit but full of hope, even though I do not deserve your prayers. And to those who may think of stealing this work without acknowledgement, may they be cursed with the fate of Cain and of Judas. Woe unto them.